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ARE FUNGUS INFECTIONS INCREASING AS A RESULT OF ANTIBIOTIC THERAPY?

Albert M. Kligman, M.D., Ph.D., Philadelphia

An increasing incidence of moniliasis in association with the administration of the wide-spectrum antibiotics, such as aureomycin, terramycin, and chloramphenicol (chloromycetin®), has been recorded recently.[1] For inclusion in New and Nonofficial Remedies, the Council on Pharmacy and Chemistry of the American Medical Association requires that these drugs bear a label warning the user that prolonged administration may lead to moniliasis.[2] While cutaneous and other reactions occur with some frequency after antibiotic therapy, it is believed that incrimination of moniliasis as the cause of numerous side-reactions requires critical reappraisal. Our studies indicate that: 1. Most of the reported instances of localized moniliasis are not actually cases of this disease. 2. The definitive requirements for establishing this diagnosis are often insufficiently appreciated. 3. Infection with fungi after antibiotic therapy is a complex phenomenon that is part of the general problem of superinfection with antibiotic resistant micro-organisms, including both fungi and bacteria.

SIDE-REACTIONS TO THE WIDE-SPECTRUM ANTIBIOTICS

The newer wide-spectrum antibiotics are apparently more troublesome than penicillin as a cause of undesirable side-reactions.[3] The majority of unfavorable reactions result from mucous membrane irritation. The signs and symptoms include sore mouth and throat, stomatitis, glossitis, black hairy tongue, perlèche, diarrhea, anal and vulvar pruritus, and genitocrural lesions. The mouth is oftenest involved. Whereas some of these reactions may be associated with moniliasis, they may also be expressions of various diseases, such as vitamin deficiency states, allergic reactions, bacterial and viral infections, and primary irritation. Evidently the thesis that these side-reactions are expressions of moniliasis and not of other diseases with similar features rests largely on the readiness with which Candida (Monilia) albicans may be isolated from persons showing these reactions. This evidence is not sufficient. The isolation of the organism is in itself not always diagnostically compelling. C. albicans is an endogenous organism that occurs in many persons as part of the normal respiratory and gastrointestinal flora.[4] Ordinarily this species makes up a small part of the normally present flora, which is predominantly bacterial; however, C. albicans is recoverable in large quantities in the mouths and feces of persons receiving the orally administered wide-spectrum antibiotics.[5] The isolation of this organism in striking quantities is a prominent finding in the great majority of those persons ingesting these antibiotics, whether there are symptoms or reactions of any kind. This is especially true of the oral flora when antibiotic troches are allowed to dissolve in the mouth, rather than when capsules of the drug are swallowed. The overwhelming majority of such persons do not have moniliasis.

The emergence of large numbers of C. albicans in the mouths of persons treated with antibiotics is readily explained. Wide-spectrum antibiotics do not actually sterilize the mouth or gastrointestinal tract; on the contrary, although they bring about a rapid suppression of susceptible organisms, this is followed by a gradual regrowth of antibiotic resistant organisms. The original flora is replaced; in short, a new population or community of micro-organisms arises that may be thought of as the new, temporarily resident flora as determined by the biologically selective action of the antibiotic. In the

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This study was supported in part by a grant from Lederle Division, American Cyanamid Company, and by Contract #DA49-007-MD-154 with the Medical Research and Development Board, Office of the Surgeon General, Department of the Army.

1. (*a*) Woods, J. W.; Manning, I. H., Jr., and Patterson, C. N.: Monilial Infections Complicating the Therapeutic Use of Antibiotics, J. A. M. A. **145**: 207 (Jan. 27) 1951. (*b*) Pappenfort, R. B., Jr., and Schnall, E. S.: Moniliasis in Patients Treated with Antibiotics, Biopsy **2**: 9, 1951 (Columbia University).
2. Warning Statement to be Included in Aureomycin Hydrochloride, Chloramphenicol and Terramycin Hydrochloride Labeling, report of the Council on Pharmacy and Chemistry, J. A. M. A. **145**: 1267 (April 21) 1951.
3. Tomaszewski, T.: Side-Effects of Chloramphenicol and Aureomycin, with Special Reference to Oral Lesions, Brit. M. J. **1**: 388, 1951. Williams, B., Jr.: Oral and Pharyngeal Complications of Chloramphenicol (Chloromycetin) Therapy, Am. Pract. & Digest. Treat. **1**: 897, 1950.
4. Benham, R. W., and Hopkins, A. M.: Yeastlike Fungi Found on the Skin and in the Intestines of Normal Subjects: Survey of 100 Persons, Arch. Dermat. & Syph. **28**: 532, 1933.
5. Lipnik, M. J.; Kligman, A. M., and Strauss, R.: Antibiotics and Fungous Infections, J. Invest. Dermat. **18**: 247, 1952.

mouth there tends to be a conversion of a predominantly gram-positive, antibiotic susceptible, bacterial flora to a predominantly gram-negative, antibiotic resistant flora in which, in addition to bacteria, C. albicans may be a prominent member.

In view of these considerations, the diagnosis of moniliasis in a person with some unfavorable reaction, such as glossitis and stomatitis, obviously requires more than a mere demonstration of the organism. Even the direct visualization of this organism in smears taken from the mouths of persons receiving these antibiotics is not decisively diagnostic. Recent studies at the University Hospital, particularly with troches, indicate that this organism may often be observed, sometimes abundantly, in direct smears from the mouths of persons who show no demonstrable side-effect or evidence of untoward reaction to the antibiotic. Since persons without detectable irritative reactions may harbor large quantities of C. albicans in their mouths (as demonstrated by smears and cultures) without actually having moniliasis, the problem of recognizing true moniliasis becomes very complicated. The diagnostic issue thus becomes a matter both of defining moniliasis as a disease and of laying down criteria for its definitive diagnosis. This is not always easy. It should be emphasized that caution is to be exercised when entertaining this diagnosis on the basis of the usual laboratory and clinical data.

Undoubtedly thrush, a form of localized mucous membrane moniliasis, is the commonest expression of this disease. Since it occurs in the mouth just like the commonest reactions to antibiotic therapy, it is necessary to consider whether thrush has distinctive features that would distinguish it from inflammatory reactions occurring after antibiotic therapy. In its classical form thrush is sufficiently characteristic to be differentiated from other conditions that it might superficially resemble. The typical lesion of thrush is a whitish film or plaque, which is curdy or membranous. This film is easily detached from the underlying, reddened mucous membrane. Microscopic examination of this cheesy film shows an enormous aggregation of budding cells and filaments. The plaques, in fact, represent large colonies of the fungus in almost pure form, comparable to its growth in a test tube. As mentioned previously, the mere finding of budding cells and filaments in direct smears of the mouth cannot be considered diagnostic, since these may be found in perfectly normal persons who have received antibiotics. Demonstration of a solid mass of budding cells and filaments within a grossly detachable plaque, however, is a finding of strong diagnostic cogency. Culture of the organism serves to confirm the diagnosis but is in itself not diagnostically meaningful. Perhaps there are subclinical cases of thrush in which the characteristic film does not appear, but, if such borderline cases of pathogenicity occur, present knowledge scarcely permits us to identify them as true moniliasis. The side-reactions that have been identified as moniliasis would fall in this category if the proponents of this view are to support their thesis. In our experience classical thrush is uncommon following antibiotic therapy.

It has been claimed recently that the recovery of C. albicans after antibiotic therapy may be appreciably diminished when antifungal agents, such as the mixed esters of parahydroxybenzoic acid, are incorporated in the capsules.[6] The clinical value of this "prophylactic" measure awaits evaluation. Incidentally, McVay and Sprunt believe that persons from whom C. albicans is recoverable have moniliasis. This furnishes an example of the widespread misunderstanding of the diagnostic significance of isolating this organism. The topical application of antibiotic ointments has also complicated the diagnosis of glabrous skin moniliasis. Ordinarily C. albicans is not part of the resident skin flora; for, unlike other transient but potentially pathogenic organisms of the normal skin, such as coagulase-positive strains of Staphylococcus aureus, it shows little tendency to become secondarily established on skin damaged by a variety of primary diseases, such as contact dermatitis or seborrheic dermatitis.[7] Therefore, its isolation in lesions not treated by topical antibiotics has a greater diagnostic significance than its isolation from the mouth. The diagnosis of cutaneous moniliasis is further supported by the more or less characteristic red, weeping, sharply circumscribed lesions that are typical of the disease. Thus, the demonstration of budding cells and filaments in direct smears of clinically characteristic cutaneous lesions from which C. albicans can be recovered by culture constitutes almost definitive evidence of moniliasis. The reliability of these diagnostic criteria, however, are threatened by our current studies, which show that C. albicans may become established in dermatitic skin to which wide-spectrum antibiotic ointments have been topically applied. This seems to occur chiefly when the antibiotic ointment is applied to chronic lesions, regardless of cause, for a prolonged period of time (a week or more). In our experience, lesions that heal rapidly fail to become invaded by C. albicans. Livingood has noted this phenomenon in chronic lesions treated with neomycin ointment.[8] He considered the possibility that the presence of C. albicans in chronic lesions may adversely affect the healing process. I have not, and presumably Livingood has not, observed the development of classical cutaneous moniliasis, with the features mentioned above, following the application of antibiotic ointments. The actual harmfulness of C. albicans in lesions of chronic dermatitis awaits demonstration. We have, in fact, on a few occasions observed the gradual healing following antibiotic treatment of stasis ulcers containing large numbers of C. albicans organisms. Incidentally, in my experience the application of antibiotic ointments to normal skin has not significantly altered the composition of the resident flora. C. albicans could not be recovered in normal skin treated in this way.

The diagnosis of moniliasis in tissues that are not accessible for direct inspection, such as the lungs, presents special and almost insurmountable difficulties. Obviously, isolation of the organism is not conclusive, particularly if the patient has received antibiotics. Indeed, it is believed that short of the impractical procedure of a biopsy of the lung, it is almost impossible to offer indis-

6. McVay, L. V., Jr., and Sprunt, D. H.: A Study of Moniliasis in Aureomycin Therapy, Proc. Soc. Exper. Biol. & Med. **78**: 759, 1951.

7. Marwin, R. M.: Relative Incidence of Candida Albicans on the Skins of Persons with and Without Skin Diseases, J. Invest. Dermat. **12**: 229, 1949.

8. Livingood, C. S., and others: Pyogenic Infections Treated with Neomycin, J. A. M. A. **148**: 334 (Feb. 2) 1952.

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putable criteria for establishing the diagnosis of bronchopulmonary moniliasis. Unfortunately, skin tests and serologic reactions do not have a decisive status. In fact, the skin test is almost worthless, and many normal persons have anti-Candida agglutinins in their serums.[9] Further complications arise because of the frequency with which C. albicans establishes itself in pathological tissue as a secondary invader. The cases of nonfatal bronchopulmonary moniliasis recorded in the old and recent literature almost uniformly reveal a lack of appreciation of the diagnostic complexities. In my estimation, proof of the disease has usually been inadequate, and there is a serious doubt whether many of these cases actually were moniliasis. In reviewing the literature, one is impressed with the willingness of clinicians to place a strong reliance on the isolation of the organism, particularly if there were roentgenologically demonstrable lesions in a patient with respiratory symptoms. A critical review of these cases suggests that in most of them the primary cause of the pulmonary disease could not be established and that in the absence of a definitive diagnosis the observers seized on the isolation of C. albicans as a resolution to the diagnostic puzzle. Indeed, exclusion of a primary disease such as tuberculosis and neoplasm is a cardinal requirement before entertaining a diagnosis of pulmonary moniliasis. This negative approach to diagnosis is simply indicative of the inadequacy of our present methods. Of course, one can never be sure that primary disease has actually been excluded rather than simply missed.

A favorable symptomatic response to iodide therapy does not constitute a therapeutic test for moniliasis as assumed by some authors. The therapeutic effect of potassium iodide, if any, is quite uncertain. Thus, Oblath and co-workers evidently assumed that a favorable response to iodide therapy supported the diagnosis of pulmonary moniliasis.[10] Moreover, since the work of these latter authors is very recent, it affords an example of the foregoing remarks dealing with the disputable character of the cases reported as pulmonary moniliasis. There is a reasonable doubt that even one of their six patients with "pulmonary moniliasis" actually had this disease in a primary form. In the one case in which they were able to do an autopsy, they expressed some consternation over their difficulty in finding organisms in histological sections of the viscera. Gastrointestinal moniliasis also is a poorly defined disease of questionable status. It is undoubtedly uncommon. The diagnosis of rectal or anal moniliasis is obviously not justified simply on the basis of the isolation of C. albicans in a patient with gastrointestinal signs and symptoms, such as diarrhea and anal fissures. The problem of diagnosis is more complicated than most clinicians appear to realize. Critical work in this area is greatly needed.

STIMULATION OF GROWTH OF CANDIDA ALBICANS BY ANTIBIOTICS IN VITRO

Several investigators have reported an enhancing effect of aureomycin on the in vitro growth of C. albicans.[11] This direct stimulation of the fungus has been offered as a possible explanation for the supposedly increased incidence of moniliasis after antibiotic therapy. Pappenfort and Schnall showed that the material taken from a 250 mg. capsule of aureomycin stimulated the growth of C. albicans in vitro.[11b] This effect was subsequently shown to be due to an inert carrier in the capsule (the phosphate ion present in a phosphate salt of calcium).[5] Moore's estimation of the stimulatory effect of aureomycin was purely qualitative. Quantitative studies have failed to show that aureomycin, chloramphenicol, terramycin, and penicillin enhanced the growth of C. albicans.[5] Even though Campbell and Saslaw believed that they demonstrated a growth stimulating effect of streptomycin on a number of pathogenic fungi, they were unable to show any enhancement in experimentally infected animals treated with streptomycin.[12] There is, in short, no convincing evidence that antibiotics directly stimulate the growth of fungi.

Effect of Antibiotic Therapy on Experimentally Infected Animals.—The intravenous inoculation of C. albicans into mice regularly causes death within 10 days as a consequence of renal involvement.[13] Intraperitoneal inoculation produces a more chronic and generally mild disease with a death rate of about 10%. An experimental means is thus afforded of evaluating the effects of antibiotics on acute and chronic moniliasis in mice. To date, fairly extensive researches in our laboratories have failed to show that antibiotics adversely influence the course of experimental moniliasis in mice. This is also true of the disease in rabbits and in chick embryos. We have been unable to confirm the work of Foley and Winter, who consider that penicillin therapy potentiated the infection of rabbits and chick embryos inoculated with C. albicans var. stellatoidea.[14] Indeed, our studies fail to reveal that any of the commonly used antibiotics have an adverse influence on the course of experimental blastomycosis, histoplasmosis, coccidioidomycosis, and sporotrichosis in mice. This was true when the drugs were given orally as well as when they were given by repeated intraperitoneal injection. These results will be published in detail later.

GENERALIZED VISCERAL MONILIASIS

A small number of well-authenticated cases of generalized fatal moniliasis (exclusive of generalized cutaneous moniliasis) have been recorded in which the authors stress the possible etiological role played by prolonged antibiotic therapy.[15] Such cases have evidently become commoner since the advent of the antibiotic era. Unlike the relatively benign side-reactions already described above, this is a disastrous complication. The role played by antibiotic therapy in inducing systemic mo-

9. Norris, R. F., and Rawson, A. J.: Occurrence of Serum Agglutinins for Candida Albicans and Saccharomyces Cerevisiae in a Hospital Population, Am. J. Clin. Path. **17**: 813, 1947.

10. Oblath, R. W.; Donath, D. H.; Johnstone, H. G., and Kerr, W. J.: Pulmonary Moniliasis, Ann. Int. Med. **35**: 97, 1951.

11. Pappenfort and Schnall.[11b] Moore, M.: In Vivo and in Vitro Effect of Aureomycin Hydrochloride on Syringospora (Monilia, Candida) Albicans, J. Lab. & Clin. Med. **37**: 703, 1951.

12. Campbell, C. C., and Saslaw, S.: Failure of Streptomycin to Enhance the Infectivity of Histoplasma Capsulatum in Mice, Pub. Health Rep. **66**: 16, 1951.

13. Kligman, A. M.: Unpublished data.

14. Foley, G. E., and Winter, W. D., Jr.: Increased Mortality Following Penicillin Therapy of Chick Embryos Infected with Candida Albicans Var. Stellatoidea, J. Infect. Dis. **85**: 268, 1949.

15. (*a*) Gausewitz, P. L.; Jones, F. S., and Worley, G., Jr.: Fatal Generalized Moniliasis: Report of a Case, Am. J. Clin. Path. **21**: 41, 1951. (*b*) Zimmerman, L. E.: Candida and Aspergillus Endocarditis, with Comments on the Role of Antibiotics in Dissemination of Fungus Disease, Arch. Path. **50**: 591, 1950.

niliasis requires serious analysis. The meager clinical data so far available make such an estimation difficult because of the circumstances associated with the few reported cases. For instance, of seven patients with generalized moniliasis observed by Farber (see Zimmerman's paper [15b]), five had leukemia. It is true that these persons had moniliasis toward the end of their disease, and this was evidently the final cause of death. Leukemia itself, however, is a fatal disease. Whereas bacterial infection was often the terminal event in the lives of leukemic patients in the past, this complication can now be largely prevented by antibiotic therapy; moreover, antileukemic drugs prolong the lives of these patients without curing the disease. Obviously, leukemic patients do not have normal resistance to infection or to any kind of stress. The opportunity for terminal moniliasis to develop in these patients is enhanced by antibiotic therapy because of the emergence of an abundant monilial flora in the oropharnyx.

The existence of a large quantity of potentially pathogenic organisms in a very ill person predisposes to infection. These opportunistic fungi, which ordinarily have a low degree of virulence, may find conditions favorable for invasion when the host defenses are depressed by such factors as serious disease, malnutrition, surgical trauma, or old age. The occurrence in dope addicts of mycotic endocarditis due to C. parakrusei is a reflection of this same phenomenon.[16] The latter organism, normally a resident saprophyte, has a low pathogenicity limited to hosts rendered susceptible by unusual circumstances. Mucormycosis of the central nervous system, in patients with diabetic acidosis, is another illustration of the same phenomenon.[17] In the latter cases a common saprophytic laboratory contaminant is the offender. It is proper to regard fungi, as a whole, as being adventitious or incidental parasites of man. Fungi only rarely have the invasive capacity for serious damage. Disseminated fungus infections are thus uncommon; however, they are increasingly being recognized in association with other primary diseases, such as lymphoma. The principle here is that disease is a complex reaction of the host in which a number of causal factors may participate. A comprehension of disease cannot thus be afforded by identification of only one of the factors in the causal network. This is the key to understanding the nature of mycotic disease.

OTHER FUNGUS INFECTIONS COMPLICATING ANTIBIOTIC THERAPY

The ordinary laboratory weed molds, such as species of Aspergillus, are rare causes of human disease, although they are important parasites of fowl. Great caution is to be exercised in these days of enthusiastic antibiotic treatment in attributing such infections to antibiotic therapy. Zimmerman cautiously implicates penicillin therapy as the possible etiological agent in Aspergillus endocarditis in two patients.[15b] Again the real part played by the antibiotic is difficult to assess, but of great significance is the fact that one of these patients had rheumatic fever, the other a severe accident requiring amputation of a leg. Thus, primary conditions were present that could have predisposed to mycotic infection even without the antibiotic therapy. We have directly visualized Aspergillus fruiting bodies in the bowel mucosa of two patients who came to autopsy and who had received succinylsulfathiazole (sulfasuxidine®) and streptomycin by mouth for long periods of time. Both patients had primary diseases of an unknown nature in which there was severe bowel involvement. In view of the chronic diarrhea these patients had and the debility that resulted from it, antibiotic therapy probably predisposed to terminal infection with some species of Aspergillus. Still, it is to be emphasized that aspergillosis was a secondary event superimposed on a debilitating disease and not simply a consequence of a change in the bowel flora. It is in this sense that antibiotic therapy may be thought of as an indirect cause of a mycosis.

GENERAL PROBLEM OF DISEASE DUE TO ANTIBIOTIC RESISTANT ORGANISMS

Antibiotic therapy has made it increasingly rare for patients with lethal diseases to die of a terminal bacterial infection. One may anticipate that in some instances fungi will take over the role formerly played by the bacteria in bringing about death. Perhaps it will eventually be desirable to incorporate antifungal agents in antibiotics in order to prevent terminal or incidental mycotic infections.

It has now become common practice to administer a battery of antibiotics to persons hospitalized for many different reasons. Patients with an ill-defined chronic disease are almost always treated with antibiotics. Disseminated fungus infections are basically chronic diseases that may begin with vague symptoms and remain undiagnosed for months after onset. It is easy to see that in some cases, after the diagnosis becomes apparent, mycotic infections will be attributed to the antibiotic therapy. In such instances the antibiotic therapy will be simply an associated phenomenon and not a causal one. Unless one approaches this issue with caution, it will be easy to blame a wide array of clinical misfortunes on antibiotic therapy.

Has moniliasis actually increased as a result of antibiotic therapy? Perhaps it has. I believe we are probably seeing more cases of true thrush than formerly, particularly in debilitated, aged persons. This probably is simply an expression of the opportunistic pathogenicity of C. albicans. Considering the extraordinarily common use of antibiotics, however, even this localized type of infection is fairly uncommon in our experience. Our observation of a large number of patients experimentally receiving aureomycin troches (50 mg., six times daily for a week) fails to support the notion that true oral moniliasis is a common event, even though many of these persons were aged and in poor health. In the past two years we have had occasion to see a number of patients whose pulmonary disease was diagnosed as moniliasis and who were considered to have acquired this disease as a result of

16. Wikler, A., and others: Mycotic Endocarditis: Report of a Case, J. A. M. A. **119**: 333 (May 23) 1942.

17. Gregory, J. E.; Golden, A., and Haymaker, W.: Mucormycosis of the Central Nervous System: A Report of Three Cases, Bull. Johns Hopkins Hosp. **73**: 405, 1943.

antibiotic therapy. These patients had clear-cut lung lesions as demonstrated by roentgenogram, and respiratory symptoms such as cough and dyspnea. There were large quantities of C. albicans in the sputum. In no instance could the diagnosis really be verified. One patient was eventually shown to have sarcoidosis, and in another tuberculosis was finally proved. The diagnosis remained undisclosed in the others, some of whom recovered. This experience emphasizes the difficulties involved and warns against accepting this diagnosis just because everything else has been "ruled out." In this connection the caution exhibited by Gausewitz and co-workers in attributing a case of generalized moniliasis to antibiotic therapy is praiseworthy.[15a] A 10-year-old patient was admitted to the hospital with a severe hypoplastic anemia, and fungus cultures were initially negative. The authors consider that antibiotic therapy may have contributed to the eventual development of systemic moniliasis but indicate uncertainty as to the actual causal relationship; at any rate, this case would appear to be a terminal infection superimposed on a serious primary disease of unknown origin.

Actually the problem of microbial infection complicating chemotherapeutic therapy is not a new one and does not uniquely involve pathogenic fungi. The problem relates to the general issue of the role played by antibiotic resistant organisms, whether fungal or bacterial, in producing superinfection. Sommer and Favour, for instance, described four persons with recurrent respiratory disease or with surgical complications in whom the administration of penicillin, after a temporary benefit, led to the development of bronchopneumonia due to penicillin resistant gram-negative organisms.[19] The latter organisms (Escherichia coli, Proteus, and Pseudomonas) were simply a part of the emergent resistant flora that regularly results from penicillin therapy. Here, too, the new flora produced a new disease, not because the resistant organisms were particularly virulent but because these patients were chronically ill and had very low resistance. The possibility of bacterial superinfections following penicillin therapy in persons in poor health is real enough, and a number of cases are on record.[20] This is obviously a rare event and cannot be regarded seriously as a hazard of penicillin therapy. Probably superinfection with bacteria often goes undetected.

Finland notes that penicillin resistant staphylococci are being increasingly isolated.[21] Moreover, he has observed an increasing number of staphylococcic infections at the Boston City Hospital. Evidently, many strains of staphylococci are becoming resistant to antibiotics. Antibiotic therapy is thus creating a new biologic problem, that of antibiotic resistance. The speed with which certain organisms become resistant to the sulfonamides is well known. Actually, the subject of the present report is related to the larger problem of microbial resistance.

COMMENT

Antibiotic therapy does not bring about sterilization of areas normally inhabited by micro-organisms. After a variable period of time, resistant organisms establish a new flora. Such organisms may originate in different ways: 1. They may represent bacteria or fungi that were initially present in small numbers, being held in check by the competition of more dominant organisms. (This is probably the chief source of C. albicans following antibiotic therapy.) 2. They may arise from an outside contactant source. 3. Originally susceptible organisms may acquire resistance by biologic adaptation and variation. The fungi cannot be included under this latter group, since they are intrinsically resistant to the presently used antibiotics. The development of a resistant or nonsusceptible flora is a regular and expected consequence of antibiotic therapy, whether this flora is composed of fungi and bacteria that are naturally resistant and that become dominant simply because of the elimination of competing organisms or whether originally susceptible organisms acquire resistance after being in prolonged contact with the antibiotic. In the overwhelming majority of cases the elimination of susceptible organisms and their replacement by nonsusceptible ones has no real clinical significance. In some cases, particularly when the host's defenses are depleted by primary disease, the intrinsically resistant flora, ordinarily composed of organisms of relatively low virulence, acquires pathogenicity. This is an infrequent and usually not too serious event with the fungi (C. albicans) and the resident, gram-negative bacteria (E. coli, Pseudomonas, Proteus, etc.). The problem of antibiotic resistance, however, acquires a greater significance in respect to those organisms that are not intrinsically resistant, such as coagulase-positive staphylococci and hemolytic streptococci. The latter organisms are potentially highly virulent, and the increasing incidence of resistant strains has serious clinical implications. This problem, in my opinion, is likely to be of far greater significance than the problem of superinfection with fungi.

SUMMARY

Candida albicans regularly emerges in abundance in the mouths and gastrointestinal tracts of those receiving wide-spectrum antibiotics. The isolation of this organism in the presence of some untoward side-reaction, such as glossitis or stomatitis, is not tantamount to a diagnosis of moniliasis. Evidence is presented that the stigmatization of the mucous membrane reactions observed in association with antibiotic therapy as moniliasis is probably unfounded. The diagnostic complexities of recognizing pulmonary moniliasis are described.

The wide-spectrum antibiotics were not found to enhance the growth of C. albicans in vitro nor to potentiate mycotic disease in animals with experimental moniliasis, blastomycosis, histoplasmosis, coccidioidomycosis, and sporotrichosis. The problem of superinfection with fungi is discussed in relation to the general problem of microbial resistance to antibiotics.

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ACUTE ULCERS OF UPPER GASTROINTESTINAL TRACT

THEIR RELATION TO SYSTEMIC STRESS AND ADRENAL DAMAGE

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An acute ulcer of a nonspecific type is the initial lesion in the development of a chronic peptic ulcer. This fact has been presumptively established by experimental evidence from the laboratory and descriptive evidence obtained during surgical procedures and necropsy.[1] However, few investigators have directed their attention toward acute ulcers of the upper gastrointestinal tract, while the literature on chronic ulcers is abundant.

It is very difficult to gather evidence of acute ulcers, because they heal very rapidly, and the majority heal without leaving a trace. Acute ulcers are difficult to demonstrate by radiography, and are seen only when the stomach is inspected by the gastroscope, at operation, or at necropsy. Selye [2] reports that acute gastrointestinal ulcers have formed during the alarm reaction following systemic stress. He has shown that various stresses that affect large portions of the body, such as trauma, surgery, burns, infections, fatigue, or emotional tension, will produce an alarm reaction.

Several observers have reported acute ulcerations of the esophagus, stomach, and duodenum after surgical operations. The first case of postoperative duodenal ulceration was reported by Billroth [3] in 1867. Penner and Bernheim [4] reported in detail four cases of ulcerative lesions in the esophagus, stomach, and duodenum following surgical operations. Cushing [5] reported peptic ulcer in the stomach with perforation in a few cases following brain operations.

The occurrence of acute erosions and ulceration in the stomach and duodenum has been noted repeatedly in consequence of severe cutaneous burns. This was first reported by Curling [6] in 1842. Vinson [7] has noted that external trauma may be a cause of acute lesions of the esophagus, and reported four cases of this type, but did not offer any explanation as to how these lesions were brought about. Acute ulcers in the gastrointestinal tract have been observed in the newborn in association with birth trauma.

In attempting to produce gastrointestinal lesions in experimental animals, Selye [8] found that ulcers were more readily produced following adrenalectomy. He states that erosions are especially easily produced after the adrenal glands have been removed, while adrenalectomy in itself does not cause gastric erosions to develop in the rat.

There is ample evidence in the literature that damage to the adrenal glands is accompanied by a high incidence of ulcerative lesions of the esophagus, stomach, and duodenum. In 1916 Mann [9] showed that lesions developed in the stomach and duodenum in approximately 90% of animals that died of adrenal insufficiency as the result of removal of both glands. In one animal examined within 10 hours after adrenalectomy, he found several focal hemorrhagic areas that he believed were possibly the beginning of ulcers. In another animal that died 22 hours after removal of the glands, well-formed ulcers were present in the digestive tract. McLaughlin [10] found that when the adrenals were not removed but were merely damaged by a high frequency coagulating current, 17 of 21 animals had definite ulceration of the digestive mucosa.

Selye [11] has shown that these gastrointestinal ulcers occur during the shock phase of the general adaptation syndrome. However, these lesions are seldom found in clinical cases, because the gastrointestinal tract is rarely inspected during or soon after the shock phase. The terminal stage of many illnesses or severe injuries may occur during the shock phase, and therefore necropsy findings should show ulceration of the gastrointestinal tract as well as some evidence of adrenal damage. This study was undertaken with this point in view.

MATERIAL

Cases studied were from the postmortem files of the division of pathology of St. Luke's Hospital. This study concerns the incidence of acute ulcers in the esophagus, stomach, and duodenum in 1,000 consecutive necropsies performed by Dr. R. Domingues, director of the department of pathology, St. Luke's Hospital. He personally examined the pathological material and made a special effort to find these lesions. Since an acute ulcer may begin as a focal mucosal hemorrhage and then be converted to a hemorrhagic erosion and then to an acute ulcer, we therefore included all these lesions in our report. Each ulcer was examined microscopically for cellular infiltration around the base in order to determine whether the lesion had developed ante mortem or post mortem. Postmortem lesions were not included. Of this total number of necropsies, 57 were not considered in this report because of a restricted autopsy in which the gastrointestinal tract was not examined, or stillbirth. Thus there were 943 cases in which detailed study was made.

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ANALYSIS OF RECORDS

The focus of interest in this investigation was benign lesions of the upper gastrointestinal tract, that is, in the esophagus, stomach, and duodenum. These consisted of focal mucosal hemorrhages, hemorrhagic erosions, acute ulcerations, and chronic ulcers that were incidental findings. That these lesions occurred before death and were not the result of postmortem changes was shown by microscopic study. Acute ulcers and focal mucosal hemorrhages were also found in the jejunum, ileum, and colon, but are not discussed in this report.

The microscopic changes in the adrenal glands were studied and recorded as (1) slight or moderate congestion or round cell infiltration, (2) marked congestion or marked round cell infiltration, and (3) severe destruction of the adrenal gland, such as hemorrhages, necrosis, thrombosis, tuberculosis, atrophy and fibrosis, leukemic infiltration, and tumor metastasis to the adrenal gland. The terminal pathological condition of each case was recorded.

TABLE 1.—*Location and Type of Lesion in the Upper Gastrointestinal Tract*

Type of Lesion	Location of Lesion		
	Esophagus	Stomach	Duodenum
Mucosal Hemorrhage			
Single	0	0	0
Multiple	10	96	25
Total	10	96	25
Hemorrhagic Erosion			
Single	0	2	0
Multiple	0	20	0
Total	0	22	0
Acute Ulcer			
Single	8	15	11
Multiple	34	26	10
Total	42	41	21
Chronic Ulcer			
Single	1	5	14
Multiple	0	1	10
Total	1	6	24

RESULTS

Location and Type of Lesion.—In our series of 943 cases mucosal hemorrhages were found in 131 cases, hemorrhagic erosions in 22 cases, acute ulcers in 104 cases, and chronic ulcers in 31 cases. The chronic ulcers were incidental findings in these cases, and were not diagnosed clinically. In addition, there were 16 cases of chronic peptic ulcer in which this was the primary cause of death, either by perforation or hemorrhage. These cases were excluded from consideration in this study.

Table 1 shows the number of cases of each type of lesion and the location of each lesion. In some instances more than one type of lesion existed in the same cadaver, and in other instances the same type of lesion existed in more than one location. This made the totals in table 1 different from the totals in the other tables.

It will be noted that in 42 cases there were acute ulcers in the esophagus, in 41 acute ulcers in the stomach, and in 21 acute ulcers in the duodenum. The chronic ulcers were found more frequently in the duodenum than in the stomach, and in only one case was there a chronic ulcer in the esophagus.

Acute ulcers in the esophagus and stomach are nearly always multiple, but there were many cases in which a single acute ulcer was found in the esophagus, stomach, or duodenum. The chronic ulcers occurred as a single ulcer in the majority of cases, but there were 10 cases of multiple chronic ulcers in the duodenum.

TABLE 2.—*Age Distribution of Persons with Acute Gastrointestinal Ulcers*

Age, Yr.	Total No. of Cases	Cases of Ulcer	Percentage
Under 1	84	12	14.2
1 to 5	28	4	14.3
6 to 10	23	2	8.6
11 to 20	34	5	14.7
21 to 30	69	13	21.6
31 to 40	104	17	16.3
41 to 50	173	25	14.4
51 to 60	189	28	14.8
61 to 70	163	19	11.6
71 and over	85	11	12.9
Totals	943	136	14.4

Age Distribution.—In table 2 the hemorrhagic erosions were included with the acute ulcers, but the mucosal hemorrhages were excluded. The incidence of ulcers in the upper gastrointestinal tract was recorded for each decade of life. The highest incidence of ulcers (21.6%) occurred in persons between the ages of 21 years and 30 years, and the next highest (16.3%) occurred between 31 years and 40 years. This corresponds to the incidence of ulcers in our clinical cases. The lowest incidence (8.6%) occurred between 6 and 10 years. In the other decades of life the incidence of ulcers was about the same (14%), including those in infants under one year of age. The incidence in persons over 70 years old was 12.9%. Apparently there is little correlation between age and the incidence of ulcers.

TABLE 3.—*Terminal Pathological Conditions (Stressors) Associated with Acute Gastrointestal Ulcers*

Terminal Condition	Total No. of Cases	Cases with Ulcer	Cases with Focal Hemorrhage	Ulcer Incidence, %
Severe burn of the skin	6	3	1	66.6
Addison's disease	2	0	1	50.0
Pregnancy	8	0	4	50.0
Ulcerative colitis	6	1	2	50.0
Miliary tuberculosis	5	1	1	40.0
Severe injury	19	3	4	36.8
Liver disease	26	6	3	34.6
Peritonitis due to perforation	41	11	3	34.1
Postoperative conditions	179	36	17	29.6
Birth trauma	17	2	3	29.4
Cardiovascular disease	194	22	30	26.8
Pulmonary disease	126	17	16	26.1
Diabetes	8	0	2	25.0
Pancreatic disease	12	3	0	25.0
Chemical poisoning	4	0	1	25.0
Blood dyscrasias	26	2	4	23.0
Malignancy	112	17	7	21.4
Septicemia	23	2	2	17.3
Marasmus	6	1	0	16.6
Cerebral lesions	122	9	7	13.1
Hyperthyroidism	1	0	0	0.0
Totals	943	136	108	25.8

Terminal Pathological Conditions (Stressors).—In table 3 the 943 cases are listed according to the primary cause of death, together with the incidence of ulcer and

mucosal hemorrhage of the upper gastrointestinal tract. These terminal pathological conditions may be considered the "stressors" that produced the alarm reaction described by Selye,[2] during which the acute lesions developed.

The incidence of ulcers and mucosal hemorrhages was highest following severe burn of the skin. In three of six cases of severe skin burns there were acute ulcers and in one case focal hemorrhages. In 179 postoperative cases, there were ulcers in 36 and focal hemorrhages in 17. In 41 cases of peritonitis due to perforation, 11 persons had acute ulcers and 3 had mucosal hemorrhages. Birth trauma was also associated with acute lesions in 29.4% of cases. Table 3 shows that the incidence of lesions of the upper gastrointestinal tract was greatest in conditions of profound shock.

Changes in Adrenal Glands.—The adrenal glands were examined in all but 47 of the 943 cases, and the correlation of the gastrointestinal lesions with the pathological abnormalities observed in the adrenal glands is shown in table 4. When there were no microscopic abnormalities of the adrenal gland, the incidence of gastrointestinal lesions was only 16.5%. With slight or moderate congestion or round cell infiltration the incidence of lesions was 25%. However, when there was marked congestion or marked round cell infiltration, the incidence of acute lesions rose to 36%, and when there were hemorrhages and necrosis in the adrenal gland, the incidence was 45.9%. It is striking to note that in the 14 cases in which there was severe destruction of the adrenal tissue, the incidence of acute ulcers and mucosal hemorrhages was 71.4%. Tumor metastasis to the adrenal gland showed a low incidence of acute lesions in the gastrointestinal tract, or 15%.

TABLE 4.—*Changes in the Adrenal Glands Associated with Acute Gastrointestinal Ulcers*

	Total No. of Cases	Cases of Ulcer	Cases of Focal Hemorrhage	Incidence of Adrenal Changes and Ulcers, %
No microscopic abnormalities	315	24	28	16.5
Slight or moderate congestion or round cell infiltration	335	51	33	25.0
Marked congestion or round cell infiltration	125	33	12	36.0
Hemorrhages or necrosis	87	14	26	45.9
Tuberculosis, leukemic infiltration, thrombosis, or atrophy and fibrosis	14	5	5	71.4
Tumor metastasis to adrenals	20	3	0	15.0
Adrenals not examined	47	6	4	....
Totals	943	136	108	

COMMENT

It is evident from the present study that acute ulcers of the gastrointestinal tract are commoner than has been realized. The fact that they are not limited to the stomach and duodenum but are also found in the esophagus, jejunum, ileum, and colon shows that they apparently are the result of some generalized reaction.

Selye [2] has shown that various stresses that affect large portions of the body, such as trauma, surgery, burns, infections, or fatigue, will produce an alarm reaction, and that acute gastrointestinal ulcers have formed during the shock phase of the alarm reaction in rats. It is very difficult to gather evidence of acute ulcers in man during an alarm reaction following some form of systemic stress, because acute ulcers heal so rapidly without leaving a trace and are very difficult to demonstrate by radiography. However, if the stressor happens to be a fatal illness or a fatal traumatic condition, then the necropsy material should reveal acute lesions of the gastrointestinal tract, especially if death occurred soon after the shock phase of the alarm reaction.

In reviewing the necropsy material I was able to demonstrate acute lesions in the upper gastrointestinal tract in about 25% of the total number of postmortem examinations studied. The incidence was greatest in conditions of profound shock, such as severe burn of the skin, postoperative conditions, and severe injury.

In recording the acute lesions of the upper gastrointestinal tract, I included focal mucosal hemorrhages, hemorrhagic erosions, and acute ulcers. I felt that the initial lesion of an acute ulcer may begin as a focal mucosal hemorrhage and then be converted to a hemorrhagic erosion and then to an acute ulcer. It is interesting in this connection to compare these lesions with those described by Schindler [12] in the living, as revealed by gastroscopic examinations. He reported mucosal hemorrhages, pigment spots, hemorrhagic erosions, acute ulcers, and chronic ulcers. Furthermore, he has observed the transition of mucosal hemorrhages into true gastric ulcers.

The mucosal hemorrhages found in the necropsy material varied in size from a punctate hemorrhage to one 3 cm. in diameter. They also varied in depth. Some of these focal hemorrhages occurred so close to the surface of the mucosa that any trauma that may be produced by food or peristalsis could readily break the thin mucosal layer and convert the lesion to a hemorrhagic erosion. Necrosis of a deeper focal hemorrhage could produce an acute ulcer. Acute ulcers may extend superficially or deeply, and may even extend deep enough to cause hemorrhage or perforation. The deeply penetrating lesions can be differentiated from chronic peptic ulcer only by the absence of fibrosis and induration.

It is evident from table 1 that acute ulcers are commoner in the stomach and esophagus than in the duodenum, while chronic ulcers are commoner in the duodenum and very rare in the esophagus. Acute ulcers in the esophagus and stomach are nearly always multiple, and chronic ulcers in the stomach are almost invariably single. However, it is surprising to find that there were 10 cases of multiple chronic ulcers in the duodenum, as compared to 14 cases of a single chronic ulcer in the duodenum. It was thought that multiple chronic ulcers were rare in the duodenum. There were many cases in which the acute ulcer appeared as a single lesion in the esophagus, stomach, or duodenum. Acute ulcers in the esophagus are as common as acute ulcers in the stomach, and one must bear that fact in mind when searching for a source of upper gastrointestinal hemorrhage.

The occurrence of these acute lesions in the upper gastrointestinal tract has no relation to the age of the

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patient, as the incidence is about the same in each decade of life, including infants under one year of age. These acute lesions are manifestations of the alarm reaction produced by the terminal pathological conditions, which are the stressors.

Animal experiments have shown that the adrenalectomized animal is notoriously sensitive to various types of stress, and that the adrenal gland is a stress defense organ. My investigation shows a striking correlation between actual adrenal damage, as demonstrated by microscopic study, and the incidence of ulcerations and mucosal hemorrhages in the upper gastrointestinal tract. The severer the damage to the adrenals the greater was the incidence of acute lesions in the gastrointestinal tract. The adrenal glands may act as defense organs to the systemic reactions produced by stress, and they may play an important role in preventing the initial lesion in the pathogenesis of a chronic peptic ulcer.

SUMMARY

Experimental and clinical evidence of the relation of systemic stress and adrenal damage to the development of acute ulcers in the upper gastrointestinal tract is reviewed. In a series of 943 consecutive necropsies performed at St. Luke's Hospital a special effort was made to find the acute lesions in the upper gastrointestinal tract. There were 136 cases of acute ulcers and 108 cases of focal hemorrhages in the mucosa. The focal mucosal hemorrhages were thought to be the initial lesion of an acute ulcer in some instances.

The incidence of ulcers and mucosal hemorrhages was highest in the terminal conditions, which were more likely to be associated with shock. These terminal conditions are thought to be the stressor agents that produced an alarm reaction, during which these acute lesions developed in the gastrointestinal tract.

The occurrence of acute lesions in the upper gastrointestinal tract following stress has no relation to the age of the patient. The incidence is about the same in each decade of life, including patients under 1 year of age and over 70 years. It is a little higher between 20 and 30 years and lowest between 5 and 10 years.

Our investigation shows a striking correlation between the severity of adrenal damage, as demonstrated by microscopic study, and the incidence of mucosal hemorrhages and acute ulceration of the upper gastrointestinal tract. It is believed that the adrenal gland may be a stress defense organ.

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TREPONEMAL IMMOBILIZATION TEST

RELIABILITY OF RESULTS FOR THE DIAGNOSIS OF SYPHILIS

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and
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The diagnosis of syphilis in many patients is, of necessity, made solely on the results of serologic tests of the blood for syphilis (STS). These tests have long been known to be only relatively specific, as they are based on the presence of reagin. This substance not only is developed in the course of treponemal infections but may be found in small amounts in some normal persons, and in larger amounts in certain persons after a variety of infections.

In 1949, Nelson and Mayer [1] described the treponemal immobilization test (TPI) based on an antibody that is distinct from reagin. In animal experiments, Khan, Nelson, and Turner [2] found this antibody to be developed when they used organisms of the Treponema group (T. pallidum, T. pertenue, and T. cuniculi) but not when they used nonvirulent spirochetes. In essence, the treponemal immobilization test is based on the fact that, in the presence of active complement, the motile spirochetes obtained from rabbit's testes are immobilized, if demonstrable amounts of the antibody are present in a patient's blood or spinal fluid. If the difference between the number of organisms motile in the control tube and in the tube containing complement is 50% or more, the test is reported as positive. In humans, Nelson and his group [3] have found the result of the treponemal immobilization test to be positive in cases of untreated syphilis that had passed the primary stage and negative in cases of non-syphilitic infections, with the exception of infections caused by the Treponema group, such as yaws. In addition, they reported positive results of treponemal immobilization tests in approximately 62% of their cases of untreated primary syphilis. Magnuson and Thompson [4] have confirmed their findings, with the exception of a negative result in 13.8% of the patients with untreated secondary syphilis.

For the past two years, we have performed the treponemal immobilization test to study the reliability, significance, and limitations of its use in the diagnosis and

† Deceased, Nov. 27, 1950.

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treatment of human syphilis. We have performed 783 tests on serums from 625 patients. In this paper, we are reporting our findings for 455 patients in relation to the reliability of the test. In another paper [5] we will present our findings for the remaining 170 patients, who were classified as false positive reactors or in whom the diagnosis of syphilis was questionable.

The majority of the serums were from patients thought to be syphilitic. They were selected to represent the various phases of syphilitic infection. For comparison with the results from patients thought to be syphilitic, serums were tested from patients with diseases other than syphilis and from supposedly nonsyphilitic subjects. Most serums were obtained from our own facilities in the Vanderbilt Clinic and Presbyterian Hospital; the remainder were sent to us from the Rapid Treatment Center at Bellevue Hospital, from the United States Public Health Hospital in Staten Island, and from various physicians.

With certain changes, the test has been performed with the technique described by Nelson and Mayer.[1] It has been modified to include counting only 25 spirochetes as suggested by Magnuson.[4] When the difference between the result of the treponemal immobilization test and that of the control was close, 50 spirochetes were counted. The medium was changed in accordance with suggestions made by Nelson.[6] The amount of complement used was increased from 5% to 10%. Difficulty with nonspecific immobilization resulted from taking spirochetes from testicular syphilomas that had been present for more than 14 days. Nelson [6] has suggested this may result from sensitization of the spirochetes by antibody developed in the infected rabbit. Nonspecific immobilization also occurs if penicillin or other treponemicidal agents are present. The effects of penicillin can be neutralized by the use of penicillinase. Nonspecific immobilization can also result from collecting the specimens in chemically unclean tubes. In all cases, the Mazzini, VDRL (Veneral Disease Regional Laboratory), and Kolmer tests were performed in our laboratory on the same sample of blood or spinal fluid as was used for the treponemal immobilization test.

TABLE 1.—*Results of Treponemal Immobilization Tests on Blood of Patients with Proved Syphilis*

Original Diagnosis*	No. of Patients	Results of TPI Test		
		Positive	Negative	Doubtful
Primary syphilis	30	24	4	2
Secondary syphilis	39	34	2	3
Congenital syphilis	10	10	..	..
Neurosyphilis	33	33	..	..
Cardiovascular syphilis	8	8	..	..
Gummas	3	3	..	..
Total	123	112	6	5

* Patients are listed under the classification made at the time of diagnosis, which was made on evidence other than the result of the serologic test of the blood for syphilis. The treponemal immobilization tests were often made many years after the original diagnosis.

MATERIAL

In table 1 are presented the results of the treponemal immobilization tests in patients in whom syphilis had been diagnosed on evidence other than the results of the serologic test of the blood for syphilis. This evidence includes results of dark field examinations, clinically typical secondary syphilis, tabes dorsalis, positive reaction of the spinal fluid to the serologic test for syphilis, congenital syphilis with stigma, and dementia paralytica.

TABLE 2.—*Results of Treponemal Immobilization Tests in Patients with Latent Syphilis*

Diagnosis	No. of Patients	Results of Serologic Test for Syphilis			Results of TPI Test	
		Positive	Weakly Positive	Negative	Positive	Negative
Early latent syphilis	37	37	..	..	37	..
Late latent syphilis	213	197	4	12	204	9
Total	250	234	4	12	241	9

TABLE 3.—*Results of Treponemal Immobilization Tests in Nonsyphilitics*

Diagnosis	No. of Patients	Negative Reaction to Serologic Test for Syphilis	Negative Reaction to TPI Test
Normal	12	12	12
Diseases other than syphilis	70	70	70
Total	82	82	82

In table 2 are presented the results of the treponemal immobilization tests in patients in whom we felt justified in making the diagnosis of early or late latent syphilis without recourse to the results of the treponemal immobilization tests. In table 3 are found the results of the treponemal immobilization tests in persons with diseases other than syphilis and in persons in whom we had no reason to suspect a syphilitic infection. The results of the serologic test for syphilis, obviously, were completely negative in this group. In table 4 are reported the results of duplicate testing, at varying time intervals, which was done so that we might determine the presence of fluctuation in results of the test. In table 5 are presented the results of the treponemal immobilization tests in spinal fluids contrasted with the results of the serologic test for syphilis done on the same specimens.

TABLE 4.—*Results of Repeat Tests of the Blood Treponemal Immobilization**

No. of Patients	Results of TPI Test			
	Positive	Negative	Doubtful	Anticomplementary
34	34	..	..	..
31	..	31	..	..
5	5	..	5	..
5	..	5	..	5
4	..	..	..	4
3	..	3	3	..
1	1	..	..	1
Total 83	40	39	8	10

* Specimens taken from the same patient at different times.

TABLE 5.—*Results of Treponemal Immobilization Tests and Serologic Tests for Syphilis on Identical Spinal Fluids*

No. of Patients	Result of Serologic Test for Syphilis		Result of TPI Test	
	Positive	Negative	Positive	Negative
19	..	19	..	19
10	10	..	10	..
1	..	1	1	..
Total 30	10	20	11	19

5. Miller, J. L.; Slatkin, M. H.; Lupton, E. S., and Brodey, M.: Studies on the Value of the TPI Test in the Diagnosis of Syphilis, to be published.

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In table 1, we have purposely listed each patient under the classification that applied when the diagnosis of syphilis could be made with certainty on evidence other than the results of the serologic test of the blood for syphilis. The treponemal immobilization tests were often made years after the diagnosis (as listed) had been made. A glance at this chart will show that the result of the treponemal immobilization test in our experience was positive at the time it was made in all cases of proved congenital, central nervous system, and cardiovascular syphilis. The same was true of gummas. The groups listed as having primary and secondary syphilis are of considerable interest.

In the primary group, the interval from the time of the diagnosis of the chancre to the time of the treponemal immobilization test varies from 0 to 48 years. The four negative results occurred in patients who had been adequately treated when the chancre was present. We use the term "adequately treated" in the sense that it is an amount of treatment given in a time interval that is generally considered to be sufficient. One patient had been treated in the dark field positive seronegative phase, and the treponemal immobilization test was made 29 months later. The second patient had both dark field positive and seropositive reactions and had been adequately treated 36 months before the time of the treponemal immobilization test. The third patient had been adequately treated seven years previously, and the result of the serologic test for syphilis had become negative in six months and remained negative. The fourth patient had had what is usually thought to be more than adequate treatment nine years previously. Of the two doubtful results of the treponemal immobilization tests, one occurred in a patient with dark field positive and seropositive reaction; it is probable that the antibody was only partially developed. The second doubtful result was found in a patient 36 months after adequate treatment. Two other doubtful results are not listed as such, because results of other treponemal immobilization tests, made at different times, were positive.

In the group listed as having secondary syphilis, the interval from the time of diagnosis to the time of the treponemal immobilization test varied from two months to 21 years. The results of the treponemal immobilization tests were negative in two patients. The first patient had had his infection 21 years previously, and the result of the serologic test for syphilis had been negative for 20 years. More than adequate treatment had been given at the time of infection. The second patient had also received more than adequate treatment at the time of her infection, three years previously. The result of the serologic test for syphilis had also become negative. Of the three doubtful results of treponemal immobilization tests, two occurred in patients who had received adequate treatment, one three years and the other seven years previously. In both, the results of the serologic test for syphilis were negative. The third patient had been adequately treated four years previously, but the result of the serologic test for syphilis was still positive.

In the group of 10 congenital syphilitics, all of whom had positive reactions to the treponemal immobilization tests, the results of the serologic test for syphilis were still positive in seven and weakly positive in three at the time the treponemal immobilization tests were made. In the group of 33 patients listed as having central nervous system syphilis, the results of the serologic test of the blood for syphilis were still positive in 28 and had become negative in 5. The results of the serologic test of the spinal fluid for syphilis were positive in 29 and had become negative in 4. The results of the treponemal immobilization tests of the spinal fluid were positive in all 10 cases in which it was done. Of the group of 33 patients listed as having central nervous system syphilis, 17 had tabes dorsalis, 5 of whom had optic atrophy. Five patients had taboparesis, 7 asymptomatic central nervous system syphilis, and 4 the meningovascular type.

In the group of eight cardiovascular cases, the results of the serologic test for syphilis were positive in six, had become negative in one, and were weakly positive in one; the results of the treponemal immobilization tests were positive in all. The results of the serologic test for syphilis were positive in the three cases of gummas.

Analysis of table 2 shows that the results of the treponemal immobilization tests were positive in all the 37 patients in whom we felt the diagnosis of early latent syphilis was justified. Of the 213 patients thought to have late latent syphilis, 204 proved to have a positive reaction to the treponemal immobilization test and 9, or 5%, proved to have a negative reaction. It is interesting that the 12 patients whose reaction to the serologic test for syphilis had become negative, but were judged to have late latent disease because of inadequacy of treatment or for other reasons, all proved to have a positive reaction to the treponemal immobilization test. Of the four patients with weakly positive reactions to the serologic test for syphilis, two proved to have positive reactions to the treponemal immobilization tests and two negative reactions. Of the nine patients with negative reactions to the treponemal immobilization tests, three had been treated for syphilis more than 30 years previously, and their reactions to the serologic test for syphilis were still fluctuating. Two patients had been treated for syphilis more than 10 years previously, and their reactions to the serologic test for syphilis were positive. The remaining four patients had had a diagnosis of syphilis for less than 10 years. In two of these the reactions to the serologic test for syphilis were becoming negative at the time the treponemal immobilization test was performed. The third patient, with a low titer as determined by the serologic test for syphilis, was not influenced by treatment. The fourth had a very high titer, not influenced by large amounts of penicillin.

In table 3, it will be observed that in 12 supposedly normal subjects the reactions to both the serologic test for syphilis and the treponemal immobilization tests were negative. In the course of testing normal subjects, we found one person with a positive reaction to the serologic test for syphilis and a negative reaction to the treponemal immobilization test. This patient will be described in another paper [5] dealing with patients in whom the diagnosis of syphilis is doubtful. Seventy patients with diseases other than syphilis are listed. The reactions to the serologic test for syphilis and treponemal immobilization tests were all negative. The patients had a wide variety of diseases, such as are to be found in a clinic and general hospital. With the exception of seven patients with mul-

tiple sclerosis, there was little duplication of diagnosis in the 70 patients. Two cases of leprosy are among the group.

Examination of table 4 will show that, in our experience, if the result of the treponemal test was positive or negative, repeat tests performed on different blood specimens from the same patients showed no change. There was a variation between doubtful and positive in the results of the treponemal immobilization tests for five patients and between doubtful and negative for three patients. The five patients whose reaction to the treponemal immobilization tests were anticomplementary at one time and negative at another, the one patient whose reactions were anticomplementary and positive, and the four patients whose reactions remained anticomplementary are listed for completeness. It should be emphasized that, in the 83 patients having two or more treponemal immobilization tests, there was no reversal, either from positive to negative or negative to positive.

In table 5 it will be observed that the results of the serologic test for syphilis and treponemal immobilization test agree in 19 instances in which both are negative and in 10 where both are positive. One disagreement occurs, in a patient in whom the results of the serologic test for syphilis is negative and that of the treponemal immobilization test is positive. This patient had had primary optic atrophy since 1937. Four examinations of her spinal fluid from 1939 to 1945 showed positive reactions to the serologic test for syphilis. In 1951, the result of the serologic test of her spinal fluid was negative, but the result of the treponemal test was positive.

COMMENT

The major purpose of our study was to test the reliability of the treponemal immobilization test for the diagnosis of human syphilis. With this objective in view, the data are presented in the form that as nearly as possible fits the purpose. Our study was begun and has been continued with a completely open mind. Analysis of the evidence here presented seems to support the conclusion that the treponemal immobilization test is extremely reliable.

Of the 123 patients with proved syphilis, 6 had negative reactions to the treponemal immobilization test. These six patients all had been adequately treated early in the course of their infection, and the treponemal immobilization tests were performed 29 months to 21 years later. The results of the serologic test for syphilis were all negative and have been so, often for years. From this and other data, we feel that the results of the treponemal immobilization test probably becomes negative after the passage of a certain period of time, provided adequate treatment is given in the early phase of the infection. Absolute proof of this must, obviously, await longer studies. It is probably significant that all the negative results of the treponemal immobilization tests occurred in the group treated as having early syphilis, as there was complete agreement between the clinical diagnosis and the results of the treponemal test in the later phases of syphilis.

The results in table 2 show that the results of the treponemal immobilization tests were positive in all cases thought to be of early latent syphilis. Among 213 patients thought to have late latent syphilis, the results of the treponemal immobilization tests were positive in 204 and negative in only 9. Among these nine patients with negative reactions to the treponemal tests, the diagnosis of syphilis had been made in five, from 10 to 47 years before the treponemal immobilization tests were performed. Here we believe the explanation that the reaction to the treponemal immobilization test has probably become negative is correct. In the remaining four patients, the diagnosis of syphilis had been made for less than 10 years. In three of these, the results of the serologic test for syphilis were already negative, or of definitely low titer, at the time the treponemal immobilization tests were made. In the last patient, the result of the serologic test for syphilis was strongly positive but there was no other evidence for the diagnosis of syphilis. The possibility that the result of the treponemal immobilization test had become negative or error in diagnosis could account for these four negative results. Although our explanation of the nine examples of negative reactions of the treponemal immobilization tests may not be correct, we do not feel that they offer any challenge to the accuracy of the treponemal immobilization test. The diagnosis of late latent syphilis, at best, always offers a problem. This difficulty in diagnosis is illustrated in the report of Mohr and colleagues.[7] They found the result of the treponemal immobilization test to be positive in 96.8% of a group of patients with asymptomatic late syphilis. However, in a group of patients thought to have latent syphilis, the result of the treponemal immobilization test was positive in only 76.3%.

In table 3 there are no examples of positive reactions to the treponemal immobilization test. These tests were made on patients with a wide variety of diseases and would offer opportunity for a false positive reaction. We found no example. We did encounter a number of examples of unexpected positive reaction to the treponemal immobilization test; when the patients were confronted with this evidence, an admission of a previous syphilitic infection was obtained in every case.

From our experience to date, we are convinced that the treponemal immobilization test is an extremely accurate test for the diagnosis of human syphilis. We feel that the result of the test may become negative after the passage of a certain period of time, particularly if treatment, in the early stages of the disease, was adequate.

The place the treponemal immobilization test is to occupy as a guide to treatment requires more experience. We see no justification for further treatment of a more than adequately treated patient with negative reaction to the serologic test for syphilis, solely on the basis of a positive reaction to the treponemal immobilization test. On the other hand, the treponemal immobilization test is of great help in ferreting out the syphilitic from the group of patients often too easily classified as false positive reactors. We have noted an increasing tendency on the part of physicians to dismiss as false positive the results of the serologic test for syphilis. This diagnosis should be made only after every means is exhausted and not as an avenue of easy escape.

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The treponemal test is a complicated procedure requiring considerable trained personnel and expensive equipment and supplies. This has, of necessity, limited its use to research up to the present time.

CONCLUSION

1. The treponemal immobilization test has proved, in our experience, highly accurate in the diagnosis of human syphilis.

2. The result of the test probably becomes negative after a certain time in patients who have had syphilis, particularly if adequate treatment was given in the early stages.

3. Further treatment of the patient should be determined by present criteria. The place of the treponemal immobilization test here requires more study.

630 W. 168th St.

EPIDEMIC OF VIRAL HEPATITIS APPARENTLY SPREAD BY DRINKING WATER AND BY CONTACT

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and
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There is conclusive evidence that the virus of epidemic hepatitis is present in the stools of infected persons. Whether cross infection results from this source alone, from the urine, and/or from the nasopharyngeal secretions is still debatable. Epidemiological evidence has suggested to some workers that the virus is spread by nasopharyngeal secretions. However, such epidemiological studies have not been supported by studies in volunteers. No sound evidence has been obtained for the presence of the virus in nasopharyngeal secretions or in the urine of patients with epidemic hepatitis.

Earlier work by Findlay and Willcox [1] in Africa suggested the presence of the virus in urine. It has since been suggested by the same workers that this may have resulted from contamination of the urine with infected blood, in cases of schistosomiasis.

Transmission of the epidemic hepatitis virus by the bites of insects and/or by passive transfer through the medium of insects has not been proved, but in most epidemics spread by insect bites seems very unlikely. As in typhoid, the danger of passive transfer of hepatitis by flies contaminated by feces must always be considered as a possible mode of spread, although perhaps not an important one. However, spread by contaminated drinking water has been conclusively demonstrated,[2] and suggestive evidence has been obtained that the virus can be transmitted by contaminated milk [3] and food.[4]

It is rare to find two of these modes of spread occurring simultaneously in a single epidemic. That a virus, which appears to be water-borne in certain groups of concurrent cases, can also in the same epidemic in other groups proceed leisurely by serial transfer at approximately a 30 day interval is important in characterizing the normal pattern of the disease. It is the purpose of the present report to record small groups of both multiple and serial cases occurring in the same rural outbreak of hepatitis, which apparently resulted from such a dual mode of transmission.

DESCRIPTION OF THE EPIDEMIC

The epidemic occurred in an isolated mountainous area of Pennsylvania. The families involved lived on small farms within 15 miles of each other. Each family obtained its water from its own drilled well, and each farm had its own cesspool. This section of the Appalachian foothills has a deep layer of shale underlying a thin layer of top soil.

The clinical picture of the illness was quite typical of acute infectious hepatitis with jaundice. The patients had fever for the first few days, anorexia, nausea, vomiting, abdominal pain or distress, dark urine, often light stools, jaundice, and an enlarged, tender liver. The illnesses lasted from two to four weeks, and all patients apparently recovered completely.

The sequence of events may be more easily followed by referring to the chart. Hepatitis made its initial appearance in three different families at approximately the same time. The families were the T., D., and K families. Mr. T.'s two married daughters, Mrs. McCa. and Mrs. B., were among the first patients. Mrs. McCa. had symptoms of hepatitis on Feb. 21, 1948, and Mrs. B. during the first part of March. These sisters did not live on the T. farm, but visited there regularly every second Sunday. At about the same time members of two other families became involved. Hepatitis developed in both L. D. and his girl friend M. K. on Feb. 25. The D. and K. families lived on farms approximately one mile apart. None of these initial patients had a history of exposure to infectious hepatitis or of having received any parenteral injections.

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This investigation was conducted under the sponsorship of the Commission on Liver Disease, Armed Forces Epidemiological Board, Washington, D. C., and supported by the Office of the Surgeon General, Department of the Army.

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Secondary cases began to appear on the first of April. Mr. McCa. became ill with hepatitis on April 1. Mr. D. and his other son, D. D., became ill on April 3, and Mrs. D. on April 10. Staying with the D. family at this time was K. S., Mrs. D.'s nephew. K. S. returned home, where hepatitis developed on April 15. He transmitted the disease in serial fashion to the other three members of the household, who became ill on May 22, June 24, and July 4.

D. D. was married to one of the four McCo. daughters, and the couple apparently divided their time between the D. and McCo. farms. D. D. was confined to bed with hepatitis at the D. family farm. The whole McCo. family visited the D. farm twice during this time, and in the latter part of April D. D. was well enough to return to the McCo. farm. Sometime early in June hepatitis with jaundice developed in Mr. McCo. and his four daughters at the same time. Although the exact date of onset could not be fixed, the family and physician were certain that these five members of the McCo. family became ill with hepatitis almost simultaneously.

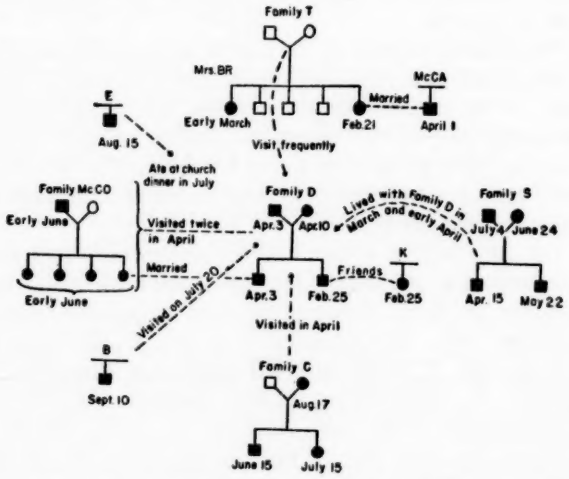

Chart showing the date each patient became ill and the apparent source of infection.

The C. family visited the D. farm frequently, and were there in April when the D. family had hepatitis. A son became ill on June 15 and his sister one month later on July 15. The mother had hepatitis beginning one month after her daughter on Aug. 17.

J. E., a highway worker, ate at a church dinner in this farm community in July and in August became jaundiced with hepatitis. One of the most interesting cases from an epidemiological viewpoint was that of J. B. This young adult visited the D. farm for one day on July 20, three months after the D. family's recovery from hepatitis, and returned to his home about 75 miles away. Hepatitis developed on Sept. 10. He had no other known contact with hepatitis, and had received no injections of any kind. The incubation period thus appears to have been 52 days.

COMMENT

The almost simultaneous appearance of hepatitis in L. D., M. K., and Mrs. McCa. suggests a common source, which could not be traced. It is possible that this earlier source may have been the T. family itself, inasmuch as the disease did not seem to spread among members of this family, who may have been immune. However, no history of previous disease among them could be obtained.

Mrs. B. became ill with hepatitis long enough after her sister, Mrs. McCa., became ill (about 2 weeks) to have contracted the disease from her sister through personal contact. Mr. McCa. apparently contracted his infection from his wife. J. E. probably was infected by the virus at a church dinner attended by many of these involved families, among whom there were two who became clinically ill during the same month in which the dinner occurred.

For the remaining cases the D. farm served as the common denominator in the spread of the disease. The almost simultaneous appearance of hepatitis in three of the D. family and the explosive outbreak in the McCo. family suggested the possibility of a common source of infection, such as drinking water. The onset of hepatitis in J. B. 52 days after he had spent a single day at the D. farm, which was three months after the D. family's recovery, suggested a water-borne infection or possibly a carrier state in the D. family. The incubation period of infectious (epidemic) hepatitis in instances in which the virus is water-borne may be prolonged, presumably because of dilution or attenuation of the virus. Neefe and one of us (J. S.) [2] observed incubation periods varying from 61 to 71 days in four volunteers who drank water that had been contaminated with the virus about three months before the water was ingested. Also, the same authors noted prolongation of the incubation period of a water-borne virus whose incubation period had been carefully determined in volunteers when the water had been subjected to chlorination and coagulation procedures.

On the basis of these epidemiological findings, it appeared possible that water from the D.'s well might be a source of virus. The well and cesspool were found to be not over 50 ft. (15 m.) apart, and the cesspool was located in somewhat higher ground than the well. Since the shale rock found in this area characteristically has many crevices, it seemed possible that the well at the D. farm was being contaminated from their cesspool.

Cultures of this well water yielded coliform organisms in three out of five samples. Two samples taken on Sept. 16, 1948, were negative. Both specimens collected on Oct. 27, 1948, were positive for coliform organisms, yielding 38 and over 240 coliform organisms per 100 ml. of water. Water collected on Nov. 4, 1948, contained 9 coliform organisms per 100 ml. It is worth noting that the positive cultures were obtained on samples collected during rainy weather, and at the time of the epidemic there had been a great deal of rain. Thus there was at least intermittent fecal contamination of the well water on the D. farm. The D. family filled their old cesspool with rock and soil sometime between Nov. 4 and Dec. 1, 1948, and built a new cesspool 300 ft. (92 m.) from the well. Following this, on Dec. 1, two samples of well water were negative for coliform organisms.

Since the virus of infectious hepatitis is known to have been present in the stools, it is probable that this virus found its way from the cesspool to the drilled well by way of the shale crevices. Probably virus from L. D.'s stools contaminated their well. The fact that three mem-

bers of the D. family became ill with hepatitis almost at the same time and the simultaneous outbreak in the five members of the McCo. family suggest a water-borne infection. Spread by food cannot be ruled out, but the demonstrated contamination of the well strongly favors water as the source. Spread of the infection by personal contact did occur and is evident in the successive involvement of members of the C. and S. families and in the development of hepatitis in Mr. McCa.

An approximate incubation period in this particular epidemic of hepatitis can be determined by noting the spread in several different families. The interval between the onset of hepatitis in two individuals or groups is not necessarily the incubation period, since the period of infectivity, although probably highest at the onset, extends both before and after the onset of illness for many days or even weeks. However, the following intervals may furnish an approximation of the incubation period in this epidemic:

Apparently by contact	
1. Mrs. McCa. to Mr. McCa	39 days
2. R. C. to L. C	30 days
3. L. C. to Mrs. C	33 days
4. K. S. to S. S	37 days
5. S. S. to Mrs. S	33 days

Apparently by water	
1. D. D. and Mr. D	38 days
2. Mrs. D	45 days
3. The 5 McCo.'s	40 to 60 days
4. J. B	52 days

The average incubation period for cases apparently spread by contact is 34 days, while those cases in which the virus was apparently water-borne had an average incubation period of 46 days. The early cases considered to be water-borne had a relatively short incubation period, while the later ones had a long incubation period. This difference may be due to progressive attenuation or dilution of the virus in water, providing continual contamination of the water was not occurring from a carrier.

SUMMARY

An epidemic of acute infectious (epidemic) hepatitis affecting 22 persons occurred in an isolated rural area of Pennsylvania. The origin of the infection could not be determined, but subsequent cases were traced to one farm. The well water on this farm was found to be fecally contaminated, presumably from the nearby cesspool. Infection was apparently spread both by drinking water and by contact.

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OUTBREAK OF INFECTIOUS HEPATITIS—PRESUMABLY FOOD-BORNE

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The way or ways in which infectious hepatitis is transmitted under natural conditions are poorly defined, but it is believed that the intestinal-oral circuit is an important route of spread. It has been emphasized that personal contact [1] is a common medium of transmission, although epidemics presumably caused by contaminated water,[2] food,[3] and milk [4] have been described. However, with the exception of the report by Neefe and Stokes,[2b] who described the occurrence of nonicteric hepatitis in volunteers after the ingestion of well water from a children's camp in which an epidemic occurred, the lack of suitable laboratory methods has made it impossible to incriminate with certainty contaminated foodstuffs or water even though the circumstances attending certain outbreaks strongly suggested this relationship. Since so many epidemiological aspects of infectious hepatitis are poorly understood, it is believed to be important to document any evidence that, although not conclusive, may contribute to a better understanding of the natural history of the disease and its control. It is the purpose of this paper to describe a small, localized, presumably food-borne epidemic in an Army camp.[5]

HEPATITIS AT CAMP EDWARDS

Camp Edwards, Massachusetts, is situated on the southern shore of Cape Cod, southeast of Boston. During the period from Nov. 15, 1950, to Sept. 24, 1951, 13 cases of viral hepatitis occurred there among troops whose mean strength ranged from 8,000 to 10,000 men. These cases were scattered both in time and place, and the last three occurred during the summer in different companies, with no known contact with the men in whom hepatitis subsequently developed in the outbreak described below.

In October and early November, 1951, a small, localized epidemic of hepatitis made its appearance in three barracks (1143, 1144, and 1145) housing B Battery of the 380th AAA Gn Battalion, numbering 87 men (figure). The first patient (R. C.) became sick on Oct. 2. He was a cook in the battery mess and, failing to report

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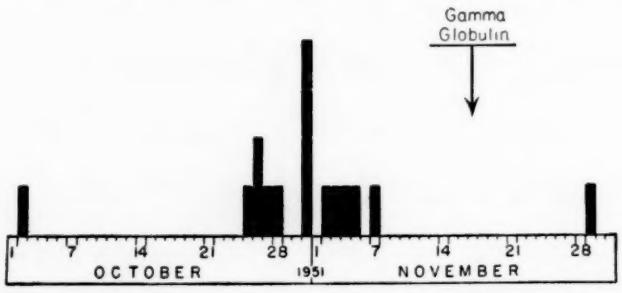
5. Havens, W. P., Jr., and Sborov, V. M.: Report of an Outbreak of Hepatitis, Camp Edwards, Mass., submitted to the Surgeon General, U. S. Army, Nov. 24, 1951.

sick, continued to work for five days after the onset of symptoms. Twenty-three days later (Oct. 25), the second case (H. S.) appeared, and during the ensuing 13 days (from Oct. 26 to Nov. 7) 13 additional cases of hepatitis occurred. Fourteen of these cases were almost equally distributed in the three barracks, with five in 1143, four in 1144, and five in 1145. One patient, also a cook, lived off the post, although he ate one meal a day in the battery's mess hall, where he worked. The only other case in the entire camp occurred on Nov. 1, in a laboratory technician from another battalion who handled potentially infectious materials.

With two exceptions (R. C. and H. S.), all the patients had been assigned to B Battery for at least four months before the onset of their disease and had been in Camp Edwards for periods ranging from four to eight months. Patients R. C. and H. S. left Inchon, Korea, July 2, 1951, and arrived in California July 21; after furloughs, on Sept. 1, 1951, they were attached, as cooks, to the 380th AAA Gn Battalion (B) at Camp Edwards. All patients had received various immunizations at some time during the six months before the onset of hepatitis, and the two men from Korea had received several inoculations there during May and June, 1951. However, in spite of the possible opportunities that may have existed for parenteral transmission of hepatitis, the clinical course of the disease simulated that ordinarily regarded as characteristic of the naturally acquired epidemic hepatitis rather than the artificially transmitted disease. All the patients had an abrupt onset with chill or chilliness, followed by anorexia, nausea, and vomiting. The course of the disease was mild, and, although in all cases detected there was jaundice, the maximum measured total serum bilirubin was 6 mg. per 100 cc.



Progress of the epidemic of infectious hepatitis. Normal immune globulin (2 ml.) was given to 72 men on Nov. 17, 1951. Black rectangle = case of hepatitis.

HOUSEKEEPING UNIT OF BATTERY B

The men in B Battery were fairly equally distributed numerically among the three barracks (1143, 1144, and 1145), each of which has space for 14 beds on the first floor and 10 beds on the second floor. In addition, there are two rooms on the first floor with two beds each, and two rooms on the second floor, one with four beds and one with two beds. There is a drinking fountain in each barracks. The sewage system of each of the three barracks drains into a central pipe, which also receives the sewage from three other adjacent barracks. This pipe then feeds into the main sewage system. All the men in B Battery eat in one mess hall, which is used and operated exclusively by the battery. The food is served at a counter, cafeteria style, in metal trays. After eating, the men remove the left-over food and rinse the trays and utensils, which are then returned to the kitchen, where they are washed with hot water and soap or detergent, rinsed, and exposed for two minutes to hot running water at a temperature of approximately 180 F. The water supply of the mess comes from the main system of the camp, and no storage tanks for drinking water are present in the mess hall.

In addition to the cook who originally contracted hepatitis, two other cooks working in the mess subsequently contracted the disease. The other 12 patients were engaged in the various activities of their battery. Although it is the custom for most of the men in the battery to rotate through KP duty on an average of once every three weeks, it may be pointed out that four of the patients with hepatitis had had no recent experience with KP duty.

CONTROL

As soon as the nature of the epidemic was appreciated, the personnel of the mess hall were ordered to scrub their hands with soap and water immediately after reporting to the mess for duty. During the ensuing two months, all the men in the battery were examined daily for signs or symptoms of hepatitis, and determinations of bilirubin and urobilinogen in the urine were made three times a week. Men suspected of having the infection were hospitalized for observation. Since the disease was believed to be epidemic hepatitis and because of the high incidence (15 cases among 87 men) and the sharply localized character of the outbreak, 2 ml. of normal immune globulin was administered intramuscularly to each of the other 72 members of B Battery who had apparently not yet contracted hepatitis, on Nov. 17, 1951. (Twenty-two other men who were assigned to the battery in the third week of December also received 2 ml. of normal immune globulin intramuscularly, on Dec. 21, 1951.)

On Nov. 29, 12 days after the inoculation with normal immune globulin, an additional case of hepatitis occurred in a member of the battery. This man worked in the motor pool but had been in close contact with several of the patients who had previously contracted hepatitis. No other cases occurred in the battery up to Feb. 29, 1952, the last date of observation.

COMMENT

Within a period of 14 days (Oct. 25 to Nov. 7, 1951), 14 cases of viral hepatitis occurred in a single battery. The time of onset of disease in this group ranged from 23 to 36 days after the appearance of symptoms (Oct. 2) in the first patient, a cook who worked regularly in the mess hall of the battery. The onset was abrupt in all cases, and the evidence strongly suggests that this explosive small outbreak represented an epidemic of the naturally acquired disease, probably initiated by exposure of a fairly homogeneous and closed group to at least one food handler carrying virus, i. e., the cook (R. C.) who was the first to contract the disease. The fact that this man worked in the mess for five days after the onset of symptoms, during the time when virus is known to be in feces, lends support to this hypothesis. Whether the last patient to become ill (Nov. 29) contracted his disease in the same way or whether he represents an example of trans-

mission by personal contact cannot be determined, although his date of onset suggests that he had been infected about the time of the explosive outbreak (Oct. 25 to Nov. 7) rather than earlier (Oct. 2), when the first patient became sick.

It is of interest to speculate on the possible source of infection of the first patient (R. C.), who left Korea early in July, 1951. He had arrived in Camp Edwards on Sept. 1 and had had no known contact with any of the three sporadic cases of hepatitis that had occurred there during the summer. Whether R. C. might conceivably represent a carrier of virus from an area (Korea) where hepatitis is widespread [6] cannot be determined, although the recent demonstration of a prolonged carrier state in infants [7] suggests that this may occur more frequently than has been suspected.

Weights and Incidence of Hepatitis in Seventy-Two Men Who Received Normal Immune Globulin Intramuscularly on Nov. 17, 1951*

Weight, Lb.	No. of Men Inoculated	No. of Men with Subsequent Hepatitis
127-140	4	0
141-160	34	0
161-190	22	0
191-200	4	1†
201-226	8	0
Total	72	1

* Dose, 2 ml.
† Onset of hepatitis Nov. 29, 1951.

Earlier reports [8] indicated that normal immune globulin is of value prophylactically when given in amounts of 0.06 to 0.12 ml. per pound of body weight, and subsequent observations suggested that as little as 0.01 ml. per pound is effective.[9] In the accompanying table are recorded the weights of the 72 men who received 2 ml. of normal immune globulin intramuscularly on Nov. 17, and it is of interest that the only one who subsequently contracted hepatitis (12 days later, Nov. 29) weighed 195 lb. (88.5 kg.). The fact that the recently reported effective minimal dose of normal immune globulin [9] did not prevent the development of hepatitis in this man may indicate (*a*) a severer and better established infection when it was injected, (*b*) a lesser amount of hepatitis antibody in the immune globulin used, or (*c*) a variety of undeterminable factors in the host. Although the lack of a control group makes it impossible to say whether the immune globulin exerted a prophylactic effect in those inoculated, the occurrence of this last case indicates the probability that a potential source of infection had existed for the whole group of 72 men when they received the globulin.

SUMMARY

The occurrence of a sharp outbreak of viral hepatitis, with 14 cases appearing from 23 to 36 days after a cook in the battery mess contracted the disease, strongly suggests that contaminated food might have been the source of infection, although the role of personal contact in this outbreak cannot be disproved.

15 Dix St., Winchester, Mass. (Lieutenant Colonel Kaufmann).

6. Havens, W. P., Jr.: Study of Viral Hepatitis Among American Troops in Japan and Korea, submitted to the Surgeon General, U. S. Army, April 25, 1951.

7. Capps, R. B.; Bennett, A. M., and Stokes, J., Jr.: Endemic Infectious Hepatitis in an Infants' Orphanage: Epidemiologic Studies in Student Nurses, Arch. Int. Med. **89**: 6-23 (Jan.) 1952.

8. Stokes, J., Jr., and Neefe, J. R.: The Prevention and Attenuation of Infectious Hepatitis by Gamma Globulin: Preliminary Note, J. A. M. A. **127**: 144-145 (Jan. 20) 1945. Havens, W. P., Jr., and Paul, J. R.: Prevention of Infectious Hepatitis with Gamma Globulin, ibid. **129**: 270-272 (Sept. 22) 1945.

9. Stokes, J., Jr., and others: Infectious Hepatitis: Length of Protection by Immune Serum Globulin (Gamma Globulin) During Epidemics, J. A. M. A. **147**: 714-719 (Oct. 20) 1951.

CORTICOTROPIN AND CORTISONE TREATMENT FOR SYSTEMIC LUPUS ERYTHEMATOSUS

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We have studied 64 patients with systemic lupus erythematosus, 30 of whom were treated with various regimens that included corticotropin (ACTH) and/or cortisone therapy. The incidence of remissions and the life expectancy in treated and untreated patients have been compared. The 34 untreated patients studied all died of systemic lupus erythematosus in the Los Angeles County Hospital during the 15 year period from January, 1935, to January, 1950. Spontaneous clinical remissions after onset of the unequivocal active disease occurred in seven of these patients. The mean duration of life after the onset of systemic lupus erythematosus in this group and in similar groups reported by Klemperer [1] and Tumulty [2] is presented in table 1. The 30 patients receiving corticotropin or cortisone were all treated in this hospital prior to July 1, 1951. The diagnosis was confirmed in each patient by one or more of the following symptoms: typical skin rash (23 patients), the presence of L. E. cells (demonstrated in 23 of 28 patients examined for them), and typical pathological tissue conditions.[2a] Of the 64 patients studied, 60 (94%) were women. Table 2 shows the effect of hormone therapy on life expectancy and remissions in the 30 treated patients. There is no evidence yet that life expectancy is prolonged.

This study was supported in part by a grant from Ciba Pharmaceutical Products, Inc., Summit, N. J.

From the Department of Medicine of the University of Southern California School of Medicine and the Los Angeles County Hospital.

The bulk of the corticotropin (ACTH) used in this study was supplied by United Laboratories, Ltd., Pasadena, Calif.; the remainder was purchased from The Armour Laboratories, Chicago. The cortisone (cortone®) was obtained from Merck & Company, Inc., Rahway, N .J.

1. Klemperer, P.; Pollack, A. D., and Baehr, G.: Pathology of Disseminated Lupus Erythematosus, Arch. Path. **32**: 569-631 (Oct.) 1941.

2. Tumulty, P. A., and Harvey, A. M.: The Clinical Course of Disseminated Lupus Erythematosus, and Evaluation of Osler's Contributions, Bull. Johns Hopkins Hosp. **85**: 47-73 (July) 1949.

2a. Hargraves, M. M.; Richmond, H., and Morton, R.: Presentation of 2 Bone Marrow Elements: The "Tart" Cell and the "L. E." Cell, Proc. Staff Meet., Mayo Clin. **23**: 25-28 (Jan. 21) 1948.

PROBLEMS OF THERAPY

Dosage of Corticotropin and Cortisone.—The amount of corticotropin or cortisone to be used in the treatment of systemic lupus erythematosus can be judged only by the clinical effects produced. Suppression of fever is a guiding factor in determining the correct dose during the early stages of treatment. If a "Cushingoid" appearance is obtained, there is usually a simultaneous remission of the disease. The appearance and remission may be maintained with small doses of corticotropin or cortisone (cases 3 and 5). Individual response to therapy varies greatly. Some of our patients have had dramatic and lasting remissions when given as little as 5 mg. of corticotropin intramuscularly every six hours for 10 days. In others, large doses failed to induce remissions (case 1). The following range of treatment schedules failed to produce remissions in a total of 14 patients (group 2 in table 2): (*a*) 5 to 10 mg. of corticotropin given intramuscularly two to six times daily for 8 to 43 days; (*b*) 12.5 to 40 mg. of corticotropin administered by continuous intramuscular clysis daily for 3 to 14 days; (*c*) 10 to 200 mg. of corticotropin administered by continuous intravenous drip daily for 2 to 24 days; (*d*) 100 to 300 mg. of cortisone given orally or intramuscularly for 6 to 11 days. The last range of dosages of corticotropin indicates the disease may be refractory to massive doses. (The fact that the adrenals were responsive to massive doses was shown by elevated 17-ketosteroid excretion during corticotropin therapy—see case 4.) Small doses of corticotropin may induce a remission, but larger doses may not be effective in treating a subsequent exacerbation in the same patient (table 3). Gordon [3] has pointed out the significant fact that continuous intravenous administration magnifies the effect of corticotropin 10 to 20 times over its effect when given every six hours by the intramuscular route. Continuous intramuscular clyses of the drug will similarly magnify its effect.

The aim of treatment of systemic lupus erythematosus is to produce a Cushing's state as quickly as possible, for it is only when clinical hyperadrenocorticism is induced that the disease is maximally suppressed. States below the Cushing level are satisfactory for maintenance. Table 4 presents the dosage regimens of corticotropin and cortisone that were successful in producing a remission of systemic lupus erythematosus and a Cushingoid appearance. The adequate maintenance doses are also tabulated. The most effective way to produce a Cushing's state is by the use of large intravenously administered doses of corticotropin, such as 40 to 60 mg. or more per day. If after 48 hours on this schedule the patient's fever persists, the daily dose should be raised to 100 mg. intravenously administered or even higher doses arrived at by similar increments. As much as 600 mg. of corticotropin per day has been given safely by the intravenous route.

TABLE 1.—*Duration of Life After Onset of Systemic Lupus Erythematosus in Untreated Patients**

	Median, Mo.	Arithmetic Mean, Mo.	Geometric Mean,† Mo.
Klemperer's series [1] (20 patients)	9	23	13.3
Tumulty series [2] (26 patients)	..	52	....
L. A. C. H.‡ series (1935-1950—34 patients)	24	38.5	22.4
(Duration of spontaneous remissions that occurred in 7 patients in L. A. C. H. series)	22	35.4	19.9

* Figured according to Moore, F. J.; Cramer, F. B., and Knowles, R. G.: Statistics for Medical Students and Investigators in the Clinical and Biological Sciences, Philadelphia, The Blakiston Company, 1951.

† Periods of time from onset to death appeared normally distributed when treated geometrically. The mean and standard deviation were calculated to be $10^{1.850} \pm 0.5$. From the L. A. C. H. sample it may, therefore, be anticipated that the mean length of life after onset is 22 months, with that for 67% of the patients falling between 7 and 69 months and for 95%, between 2.3 and 223 months.

‡ Los Angeles County Hospital.

TABLE 2.—*Effect of Corticotropin and/or Cortisone Therapy on Life Expectancy and Remissions in 30 Patients with Systemic Lupus Erythematosus**

	Duration of Disease, Mo. to Death or to the Present	Duration of Remission, Mo.	Outcome	Autopsy Lesions	Duration of Disease for Group, Mo. Median	Arithmetic Mean	Geometric Mean
Group 1.—Patients receiving single course of therapy:							
(a)† E. L.	8	3	Died	4+	....	....	....
H. J.	48	1	Died	4+	....	....	....
E. G.	48	0.75	Died	No autopsy	....	....	....
D. P.	13	5	Died	No autopsy	....	....	....
					30.5	29.3	22.1
(b)‡ F. B.	23	14	Alive and well	...	....	....	....
C. A.	18	8	Alive and well	...	....	....	....
						20.5	20.3
(c)§ M. R.	72	..	Died	4+	....	....	....
D. P.	228	..	Disease smoldering	...	....	....	....
						150	128
Group 2.—Patients in whom disease was advanced at time therapy was initiated: ‖							
E. S.	84	..	Died	No autopsy	....	....	....
M. Z.	24	..	Died	4+	....	....	....
C. P.	4	..	Died	No autopsy	....	....	....
O. T.	5	..	Died	4+	....	....	....
G. J.	10	..	Died	4+	....	....	....
G. P.	10	..	Died	4+	....	....	....
M. S.	11	..	Died	4+	....	....	....
C. C.	13	..	Died	4+	....	....	....
E. Z.	14	..	Died	4+	....	....	....
J. T.	15	..	Died	4+	....	....	....
R. S.	19	..	Died	4+	....	....	....
J. E.	28	..	Died	4+	....	....	....
M. Re.	2	..	Died	1+	....	....	....
P. S.	6	..	Died	4+	....	....	....
					10.5	17.5	9.2
Group 3.—Patients receiving continuous treatment.**							
M. A.	18	6	Alive and in remission	...	....	....	....
M. Ar.	18	4	Alive and in remission	...	....	....	....
G. F.	5	3	Alive and in remission	...	....	....	....
A. S.	20	2	Alive and in remission	...	....	....	....
M. H.	2.5	1	Alive and in remission	...	....	....	....
R. N.	8	2	Alive and in remission	...	....	....	....
B. R.	21	1	Alive and in remission	...	....	....	....
P. A.	15	2	Alive and in remission	...	....	....	....
					16.5	13.4	10.9

* All data as of July 1, 1951.

† Remission induced, with subsequent relapse and death despite further treatment with small doses. (Dosage schedules given in table 3.)

‡ Sustained remission induced. (Dosage schedules given in table 3.)

§ Therapy produced no effect; patient M. R. died of the disease 9 months after initiation of therapy, and in patient D. P. the disease is smoldering.

‖ No definite remission occurred in any patient in this group (range of dosage schedules given in text). Only one patient had massive therapy by the technique advocated in this paper.

** Dosage schedules given in table 4.

3. Gordon, E. S.: Adrenal Stimulation by Intravenous ACTH, read before the 23rd Annual Meeting of the Central Society for Clinical Research, Chicago, Nov. 3, 1951, abstracted, J. Lab. & Clin. Med. **36**: 827 (Nov.) 1950.

The solution used for continuous intravenous administration is a dilution of the ordinary corticotropin preparation for intramuscular use in 1,000 cc. of a 2.5% or 5% aqueous solution of glucose, with 10 mg. of heparin sodium per liter added to serve as an anticoagulant to inhibit local thrombophlebitis. At a rate of 10 drops per minute, this amount will usually last about 24 hours. If the needle is placed in a forearm vein, the intravenous drip may run as long as 9 days before it is necessary to change the site of administration. It is not necessary to have a continuous 24-hour drip, but a minimum of 16 hours per day is advisable. The treatment can be given as two 8 to 9 hour venoclyses. If the patient no longer has any readily available veins, the material may be administered in a 2.5% glucose solution as an intramuscular clysis in the anterior thigh area. Frequently, induration and pain occur at the site of the intramuscular clysis, and this can often be alleviated by preliminary injection of 1 cc. (150 to 250 units) of hyaluronidase through the needle, which apparently does not alter the efficacy of the corticotropin. If pain and induration still persist, it should be made certain that the needle, when reinserted, is placed in muscle tissue, since subcutaneous extravasation will produce local reaction. This can be accomplished by striking the needle against the periosteum and then withdrawing it about 2 cm.

TABLE 3.—*Dosage Schedules That Successfully Induced Remission in a Single Short Course of Therapy and Subsequent Treatment Schedules Used in Three Patients Who Relapsed*

Patient	Initial Treatment Schedule	Duration of Remission	Subsequent Treatment Schedule (Maximum Dose)	Outcome
E. L.	6 mg. every 6 hr. IM for 10 days	3 mo.	15 mg. every 6 hr. IM for 6 days	Died
H. J.	5 mg. every 12 hr. IM for 23 days	1 mo.	25 mg. every 6 hr. IM for 35 days	Died
E. G.	5 mg. every 6 hr. IM for 23 days	3 wk.	20 mg. every 12 hr. IM for 7 days	Died
D. P.	10 mg. every 8 hr. IM for 5 days	5 mo.	None	Died
F. B.	5 mg. every 6 hr. IM for 28 days	Over 12 mo.	None	Living and Well
C. A.	10 mg. every 6 hr. IM for 21 days	Over 10 mo.	None	Living and Well

Within 7 to 14 days after starting continuous intravenous therapy there is usually a slight rise in blood pressure, followed by the appearance of acne, moon facies, hyperglycemia, and glycosuria. In the presence of renal involvement, the blood pressure may be elevated initially in this disease, and in such cases cortisone is the drug of choice. When a clear-cut state of hyperadrenocorticism is reached, the treatment is changed from continuous intravenous administration of corticotropin to intermittent intramuscular injection of approximately 20 mg. of the drug every six hours, or to oral administration of 25 mg. of cortisone every six hours, to maintain the Cushingoid appearance. The patient must be carefully watched at this point for signs of relapse. To date, no patient in whom a Cushing's state has been induced and maintained has died. We agree with Haserick [4] and Soffer [5] that treatment must be continued in order to suppress the disease.

If cortisone is used, it is advisable to give it orally. In crises as much as 100 mg. every hour [4b] may be given, if necessary, to control the clinical picture, following the same criteria followed in using corticotropin. In some patients a severe hypertensive state (occasionally with encephalopathy) develops when corticotropin is used. At this point, if the disease has not been adequately sup-

TABLE 4.—*Dosage Schedules of Patients Receiving Continuous Corticotropin and/or Cortisone* Treatment in Whom a Remission was Induced and Maintained*

M. A.
20 mg. corticotropin every 6 hr. IM for 14 days to produce Cushing's state, then 15 mg. corticotropin every 6 hr. for 1 mo., then 10 mg. every 8 hr. for 2 mos., and finally 25 mg. cortisone every 8 hr. for 3 mo. (maintenance dose)

M. Ar.
50 to 100 mg. corticotropin by continuous IV drip for 3 wk. produced only hypertension. 20 mg. corticotropin every 6 hr. IM plus 100 mg. TCP † per day for 10 days to produce Cushing's state and remission, then 20 mg. corticotropin every 8 hr. plus 100 mg. TCP per day for 6 wk., and finally 25 mg. cortisone every 12 hr. for 2 mo. (maintenance dose)

G. F.
40 mg. corticotropin by continuous IV drip for 14 days to produce Cushing's state, then 10 mg. corticotropin every 8 hr. IM for 2 mo., and finally 25 mg. cortisone every 8 hr. for 3 mo. (maintenance dose)

A. S.
40 to 60 mg. corticotropin by continuous IV drip for 20 days caused hypertensive encephalopathy and remission, followed by crisis on cessation of therapy for 24 hr. A hypertensive state appeared when corticotropin therapy was restarted. Cortisone was then given in the following daily doses:

300 mg., for 7 days
500 mg., for 7 days
400 mg., for 8 days
300 mg., for 3 days
500 mg., for 5 days
200 mg., for 6 days
100 mg., for 4 days
75 mg., for 1 month (maintenance dose)

M. H.
300 mg. cortisone per day for 3 days, then 200 mg. cortisone per day for 3 days, and finally 100 mg. cortisone per day for 1 month (maintenance dose)

P. A.
100 mg. cortisone per day, plus 75 mg. TCP per day IM, for 40 days to produce Cushing's state, and then 50 mg. cortisone per day for 1 month (maintenance dose)

R. N.
60 mg. corticotropin IV per day for 4 days produced left ventricular failure. Cortisone was then given in the following daily doses:

150 mg., for 5 days
200 mg., for 3 days
300 mg., for 4 days
400 mg., for 2 days—hypertension and dizziness; relapse 16 hr. after cortisone therapy was stopped

150 mg., for 8 days
200 mg., for 4 days
300 mg., for 30 days (maintenance dose)

B. R.
50 mg. corticotropin per day by continuous IV drip for 11 days, then 75 mg. corticotropin per day by continuous IV drip for 4 days, then 125 mg. corticotropin per day IM for 3 days, and finally 200 mg. per day IM for 11 days to produce Cushing's state

* Cortisone was administered orally to all patients in this group who received it.
† Testosterone cyclopentyl propionate.

4. (*a*) Haserick, J. R.: Plasma L. E. Test in Systemic Lupus Erythematosus: Study of 23 Patients with Positive L. E. Tests, J. A. M. A. **146:** 16-20 (May 5) 1951. (*b*) Haserick, J. R.; Corcoran, A. C., and Duston, H. P.: ACTH and Cortisone in Acute Crisis of Systemic Lupus Erythematosus, ibid. **146:** 643-645 (June 16) 1951.

5. (*a*) Soffer, L. J.; Levitt, M. F., and Baehr, G.: Use of Cortisone and Adrenocorticotropic Hormone in Acute Disseminated Lupus Erythematosus, Arch. Int. Med. **86:** 558-573 (Oct.) 1950. (*b*) Baehr, G., and Soffer, L. J.: Treatment of Disseminated Lupus Erythematosus with Cortisone and Adrenocorticotropin, Bull. New York Acad. Med. **26:** 229-234 (April) 1950.

pressed, it is advisable to change the treatment to cortisone, which has less mineralocorticoid activity. The same applies if the patient has hypertension with the disease. If malignant hypertension is present none of these hormones should be used.

Adjuvant Measures.—To combat the adverse effects of corticotropin and cortisone, additional therapeutic measures are necessary. In the absence of a salt-losing nephropathy, the patient should be placed on a 200 mg. sodium diet prior to and during the early phases of treatment. After the disease is controlled, it is possible to reduce the strictness of the dietary regimen gradually. The patient should be given 8 to 12 gm. per day of orally administered potassium chloride or citrate to counteract the hypokalemic effects of these hormones. Metabolic alkalosis due to hypopotassemia may occur despite this preventive therapy. In view of the increased ascorbic acid utilization during corticotropin therapy and the suggestive evidence of a hemorrhagic diathesis caused by an induced vitamin C deficiency, the patient should be given 500 mg. of ascorbic acid per day.[6]

In order to combat the catabolic effects of corticotropin and cortisone and possibly to inhibit the fundamental abnormality of systemic lupus erythematosus, we gave large doses of testosterone to our patients. As much as 500 mg. of testosterone propionate per day for as long as 35 days did not virilize 7 women with the active disease (see cases 1 and 4); however, after a remission was induced by corticotropin therapy it was possible to masculinize these patients with as high or smaller doses. During exacerbations of the disease, these patients excrete about 10% of the administered testosterone as 17-ketosteroids (case 4), as compared with the normal excretion of 40%.[6a] Further details of the peculiar metabolism of testosterone in this disease will be published in a subsequent report.[7]

Disease and Treatment Complications Having Similar Manifestations.—Differentiation of symptoms of systemic lupus erythematosus from complications of therapy is important, since these may have similar manifestations (cases 1, 2, 3, and 4). Haserick [8] has emphasized the frequency with which seizures occur in untreated patients. In Klemperer's series,[1] 6 of 20 patients had terminal convulsions. In our series, 13 of the 30 patients treated had grand mal seizures at some time in the course of treatment, and 11 of 16 patients who died in the hospital had seizures 48 to 72 hours before death. Autopsies were done on 15 of these, and in most the cause of death was cerebral angiitis due to systemic lupus erythematosis. (Since the advent of antibiotics, few of these patients have died as a result of secondary infections.) It is difficult to distinguish between convulsions caused by the disease and those resulting from hormone therapy. Fortunately, seizures caused by corticotropin do not usually occur during early treatment or before a marked Cushing's state has appeared. If the patient has had a recent exacerbation of the disease, is febrile and normotensive, has a positive tourniquet test owing to the active angiitis, and has no evidence of a recent considerable weight gain, the convulsions are most likely due to the disease itself (cases 1 and 2), and the hormone dose should be increased. The cause of psychoses can be determined in the same way, provided hypopotassemia can be ruled out. Convulsions caused by corticotropin occurred in the patient in case 3.

Periorbital edema is common in exacerbations of systemic lupus erythematosus and is usually accompanied by increased butterfly erythema. With clinical improvement during therapy, there is a rapid disappearance of this swelling. It is important not to confuse this change with the occurrence of an early Cushing's syndrome, in which there is swelling of the malar and submandibular areas.

Because of nephropathy due to lupus erythematosus, hypochloremia and hyponatremia may occur before or during corticotropin therapy. This may be corrected by diet supplementation. Hyperthyroidism occurred as a coincident disease in two of eight patients receiving massive doses of corticotropin and cortisone, contrary to the observations of most other workers.[8a] Boland and Headley [9] also noted the appearance of probable hyperthyroidism in 2 of their 42 patients with rheumatoid arthritis who were under cortisone therapy. We have seen no cases of induced hypothyroidism in our series. Myocarditis of lupus erythematosus responded poorly to therapy, but concurrent hyperthyroidism was successfully treated with I^{131} and propylthiouracil (case 5).

RESULTS OF TREATMENT

The pattern of clinical improvement in our patients closely follows that described by Soffer and his associates.[5] The fever abates in 24 to 48 hours, joint pains disappear in several days, and pleural effusions and cutaneous lesions subside in one to two weeks. Retinal changes, anemia, and cachexia gradually improve over a period of several weeks. In view of the severity of this disease, with the danger of sudden death at any time, we feel that these patients should receive vigorous treatment as soon as a diagnosis is made. Death may still occur prior to production of a Cushing's state, despite weeks of therapy with massive doses of intravenously administered corticotropin.

The circulating eosinophil count is usually low or zero in exacerbations of systemic lupus erythematosus, even in untreated patients, and consequently is of no value in following these patients. Determination of urinary 17-ketosteroid excretion is also of little use, because it may be elevated to a high level even though the patient is not improving clinically (case 5). Adrenal exhaustion does not occur with corticotropin stimulation in this disease. Failure to respond is usually due to inadequate dosage of corticotropin or extreme exacerbations of the disease itself.

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7. Commons, R. R.; Dubois, E. L., and Starr, P.: Observations on the Effects of Massive Androgen Dosage in Acute Diseases, to be published.

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9. Boland, E. W., and Headley, N. E.: Management of Rheumatoid Arthritis with Smaller (Maintenance) Doses of Cortisone Acetate, J. A. M. A. **144**: 365-372 (Sept. 30) 1950.

L. E. cells disappeared completely within six weeks in seven patients, after induction of a remission. Six of the eight patients in the continuous treatment group had L. E. cells on admission; in five of these the cells disappeared during remission, and in the other one they have greatly diminished in number, some L. E. preparations from this patient being negative. The L. E. cells disappeared also in two patients who had only a brief course of therapy. The findings of these cells depends to a large extent on the duration of the search for them in the smear. At times thousands of white blood cells must be examined before a single L. E. cell is discovered. Unfortunately, the persistence of the L. E. factor was not studied in five earlier patients who had remissions. Usually there is a direct correlation between activity of the disease, especially fever, and the number of Hargraves cells present. L. E. cells have not been found in afebrile untreated patients. We have seen four patients who, at the time of death, had no lupus erythematosus phenomena demonstrable. One had had a highly positive smear a week before, and another had only rarely had an L. E. cell. Autopsy in each case confirmed the diagnosis of systemic lupus erythematosus.

In our experience, renal abnormalities, including proteinuria, sediment changes, and nitrogen retention, may return to normal during remissions, but can also do so spontaneously.[10] Soffer, Brunsting, and others have not found this to be true.[11] Of the 14 patients in whom clear-cut remissions were induced, 5 showed nephropathy; renal abnormalities cleared completely in all of these during remissions. None of these patients had had long-standing renal involvement. In two patients nephropathy developed during treatment, and in both it cleared with an elevated maintenance dose of cortisone. Of the 14 patients who had remissions, anemia was present in 12, and in 11 of these it was greatly improved by hormone therapy. The hemoglobin rose from levels as low as 4.5 gm. to 16 gm. per 100 cc. (Sahli method) within 4 weeks. Persistent anemia in absence of uremia is a sign of inadequate treatment. Patients with acquired hemolytic anemia due to systemic lupus erythematosus respond remarkably well to hormone therapy.[12] Of the 14 patients who had remissions, 11 had initial leukopenia; 10 of these showed normal white cell counts during remission. In all patients the sedimentation rate remained elevated in spite of apparent remission.

REPORT OF CASES

CASE 1 (fig. 1).—C. P., an 18-year-old Mexican girl, was admitted to the Los Angeles County Hospital on Jan. 13, 1951, complaining of having had sore joints and fever since November, 1950. Generalized weakness, morning facial edema, and swollen, bleeding gums had developed more recently. On admission the patient's temperature was 101 F, pulse rate 100, and blood pressure 120/70 mm. Hg. She weighed 120 lb. (54.4 kg.) and was well developed and well nourished. Her gums were hypertrophic, and the gingival margins were injected. She had bilateral pleural effusion to the level of the eighth rib posteriorly. Significant results of laboratory tests were as follows: proteinuria (7.0 gm. per day); presence of nephropathic sediment in the urine; hemoglobin, 8.6 gm. per 100 cc.; white blood cell count 2,400; presence of L. E. cells in peripheral blood and bone marrow; and nonprotein nitrogen, 63 mg. per 100 cc.

Treatment with testosterone ester[13] (1 gm. per day for 14 days) produced no clinical or laboratory improvement. This was followed by treatment with testosterone propionate, 500 mg. per day, concomitantly with the corticotropin therapy described below, for the next 29 days, with no evidence of resultant virilization. Administration of 30 mg. of corticotropin daily for 4 days by continuous intravenous drip was ineffective.The intravenous dose was increased to 100 mg. of corticotropin daily, and the patient became afebrile in 24 hours. The nonprotein nitrogen level had risen to 92 mg. per 100 cc. at this time, despite adequate hydration. Three days later clinical improvement was evident. In two weeks facial edema and erythema had subsided, and pleural effusions had lessened. A few days later thrombophlebitis developed at the site of the intravenous cannula in the right leg. (Note in figure 1 the absence of febrile response.) Four days later continuous intravenous administration of corticotropin was changed to continuous intramuscular clysis, with maintenance of clinical improvement. At this time the nonprotein nitrogen level had dropped to 45 mg. per 100 cc. and the degree of proteinuria had lessened to 2 gm. per day, although the urinary sediment had not changed. During the heavy corticotropin dosage hyponatremia and hypochloremia developed, and the patient required a diet supplement of salt for correction. Against our advice, the patient was transferred to another hospital, and the corticotropin dose was decreased because of a rise in blood pressure to 142/106 mm. Hg with no other evidence of a Cushing's state. The next day the patient was febrile, and the butterfly rash reappeared. Four days later she had uncontrollable convulsions and died.

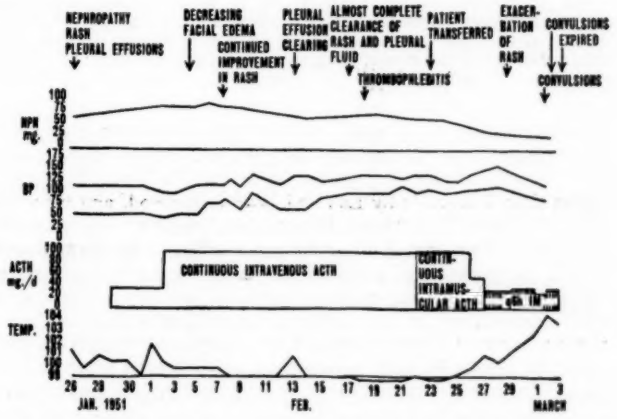

Fig. 1.—Clinical course of patient C. P. while receiving corticotropin therapy.

CASE 2 (fig. 2).—M. Ar., a 19-year-old Mexican girl, was admitted to this hospital on July 10, 1950, complaining of a rash on the legs of nine months duration and arthralgia of several months duration. Physical examination revealed a moderately ill, febrile girl, with lesions of lupus erythematosus on the face, arms, and forearms. Laboratory examination showed the hemoglobin level to be 5 gm. per 100 cc., white blood cell count, 4,500, with a normal differential count, and the presence of L. E. cells.

On Aug. 4, 1950, the patient was placed on corticotropin therapy, 5 mg. administered intramuscularly every 12 hours. This dose was gradually increased during the next 10 days to 10 mg. every 6 hours, with only mild improvement in her gen-

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12. Dubois, E. L.: Acquired Hemolytic Anemia as the Presenting Syndrome of Lupus Erythematosus Disseminatus, Am. J. Med. **12**: 197-204 (Feb.) 1952.

13. Testosterone beta-diethylaminoethyl carbonate hydrochloride was supplied by Ciba Pharmaceutical Products, Inc.

eral condition and production of a partial remission. On Nov. 16, 1950, after 3½ months on the above dosage schedule, the patient was fairly well; she had been afrebrile for the preceding 2 weeks, during which her hemoglobin level had risen from 9.5 to 11 gm. per 100 cc. Two days later, while the patient was still receiving the same dosage, dry cough, arthralgia, and facial edema with butterfly erythema appeared, and her temperature went up to 105 F. At this point convulsions occurred, with

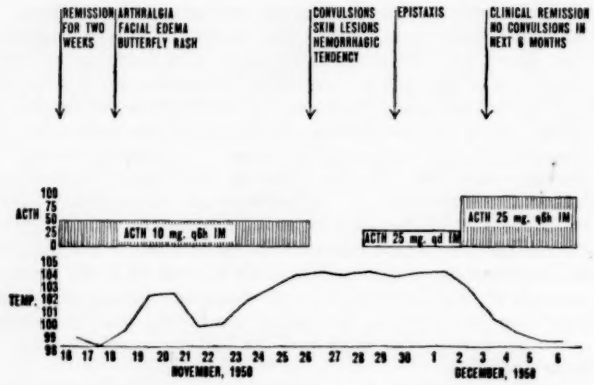

Fig. 2.—Clinical course of patient M. A. while receiving continuous treatment with corticotropin. The convulsions were due to active systemic lupus erythematosus. In the subsequent six months during which no convulsions occurred, the patient received corticotropin and cortisone therapy as indicated in table 4.

an exacerbation of all skin lesions. Oral lesions occurred, with hemorrhage from the mucous membranes. Examination at this time showed her blood pressure to be 166/70 mm. Hg, coagulation time 5 minutes by Lee and White's method, and bleeding time 11 minutes. A tourniquet test was negative, the platelets were normal on smear, the prothrombin time was normal, and results of spinal fluid examination were negative. The patient was semicomatose and seemed moribund. The corticotropin dose was increased to 25 mg. every 6 hours, and within 48 hours there was rapid improvement in all symptoms. (The treatment schedule shown in table 4 was begun four weeks after this relapse, because the remission produced by corticotropin therapy up to that time had been only temporary and incomplete. We then began to feel that vigorous hormonal treatment with production of a Cushing's state, as described in this paper, was the choice method of therapy, and, therefore, treatment with the larger doses described in table 4 was started.) The patient had no subsequent convulsions during the next six months on corticotropin and cortisone therapy, although her blood pressure at times was as high as 240/120 mm. Hg.

Case 3 (fig. 3).—M. A., an 8-year-old Mexican girl, was admitted to this hospital on May 24, 1950. (Hematological details of this case are reported elsewhere.[12]) She had been well until December, 1949, when skin pallor, fever, anorexia, generalized adenopathy, weakness, and arthralgia appeared. Physical examination revealed hepatomegaly and splenomegaly. A diagnosis of acquired hemolytic anemia was made at that time, all the classic changes being demonstrable. In March, 1950, a splenectomy was performed, and microscopic studies of the spleen showed the characteristic lupus erythematosus changes. In July, 1950, a butterfly rash appeared, which lasted for a few weeks. The patient's blood continued to hemolyze until corticotropin therapy was instituted. With development of a Cushing's state, her hemoglobin level rose from 8.5 to 15 gm. per 100 cc., without transfusion. Results of urinalyses done at various times were normal. The patient has been receiving continuous corticotropin therapy for a total of eight months and has shown no evidence of developing resistance or antibodies to the drug.

Prior to her convulsive episode, the patient had been maintained in full remission for 5.5 weeks on 15 mg. of corticotropin administered intramuscularly every six hours, with her blood pressure averaging 130/80 mm. Hg. Note in figure 3 that from Feb. 5 through 9, she continued afebrile, and her body weight rose from 58.25 lb. (26.4 kg.) to 61 lb. (27.7 kg.), although she was on a 200 mg. sodium diet. At 6 p. m. on Feb. 9, she complained of severe headache 15 minutes after an injection of corticotropin. Her blood pressure at this time was 220/140 mm. Hg. No corticotropin was given for the next five days. With sedation and meralluride (mercuhydrin®) injection therapy her blood pressure fell during the night to 130/90 mm. Hg, and the next morning at 8 o'clock she began having generalized convulsions. Note in figure 3 that the fever appeared after the onset of convulsions. The patient was critically ill for 12 hours and almost died. She stopped breathing, and positive pressure oxygen and artificial respiration were given. She had never previously had seizures, nor did she have any during the subsequent six months. Four days later, a test dose of 10 mg. of corticotropin was given. The control blood pressure was 120/75 mm. Hg; within 15 minutes it rose to 145/104 mm. Hg, and within 40 minutes it dropped to 125/90 mm. Hg. On February 17 another test injection was given, which had a greater pressor effect (fig. 3). Nevertheless, the patient was again started on corticotropin therapy (10 mg. every 8 hours), because relapse was feared. There were no subsequent ill effects during the following six months. (The same doses of the same brand and lot number of corticotropin given this patient produced no pressor response in normal persons.)

Case 4.—R. S., a 38-year-old Mexican housewife, was admitted to this hospital on April 19, 1950. Since May, 1949, she had had persistent joint pain, chest pain, fever, and erythematous skin rash.

On admission she weighed 127 lb. (57.6 kg.), had a temperature of 100 F., a pulse rate of 100, and blood pressure of 133/90 mm. Hg. She was well developed and well nourished and was in no severe distress. She had typical lupus erythematosus skin lesions on the face and scalp, bilateral pleural effusion, and moderate redness, swelling, and tenderness in most of the major and minor joints. Laboratory tests showed 9.5 gm. of hemoglobin per 100 cc., a white blood cell count of 3,100, the presence of L. E. cells in peripheral blood and bone marrow, and 30 mg. of nonprotein nitrogen per 100 cc.; results of urinalysis were normal, and urinary 17-ketosteroid excretion was 1.8 mg. per day.

Beginning in April, 1950, the patient was given 10 mg. of corticotropin intramuscularly every 6 hours for several weeks. This produced no major clinical change. Corticotropin therapy was started again on Oct. 12, 1950, with the same dose. On Oct. 25, 1950, the patient began to have convulsions, which were controlled by increasing the corticotropin dose to 25 mg. every 6 hours. Because of continued fever, the dose was increased to 50 mg. every 6 hours; this was without effect, despite an increase in 17-ketosteroid excretion from 1.1 to 11.8 mg. for 24 hours. A seven day course of cortisone was not helpful. With

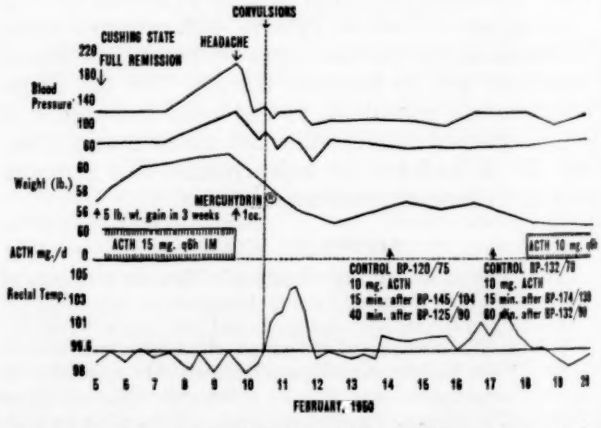

Fig. 3.—Clinical course of patient M. A. during crisis period that occurred after corticotropin therapy had been instituted. The convulsions were due to corticotropin. Note the pressor effect of corticotropin at the sub-Cushing level.

the use of testosterone ester,[13] followed by testosterone propionate, in massive dosage (1,000 and 500 mg. per day, respectively), there was a temporary remission of symptoms, with subsequent exacerbation. We feel that it is important to note that no signs of virilization appeared with these large doses of testosterone, although this therapy was continued for five weeks. The patient excreted only 47.7 mg. of 17-ketosteroids per 24 hour period

while receiving 500 mg. per day of testosterone propionate. The fact that approximately 10%, rather than 40%,[6a] of administered testosterone was present as 17-ketosteroids in the urine suggests abnormal metabolism or increased utilization of testosterone. Continuous intramuscular administration of corticotropin in increasing doses produced slight effect on an exacerbation, during which the patient died.

CASE 5.—R. N., a 30-year-old Japanese housewife, weighing 88 lb. (39.9 kg.) was admitted to this hospital on May 2, 1951, complaining of aching in her joints of 6 months' duration. The illness had begun in December, 1950, when she noted aching in her fingers while typing. In February, 1951, generalized malaise appeared, along with arthralgia in both knees and pleurisy. In April, 1951, the patient was digitalized because of myocarditis and early congestive heart failure. Her history revealed that, in 1942, her thyroid had been found to be enlarged, and her basal metabolic rate was slightly elevated; at that time thyroidectomy was suggested but was not done. In 1946, after a careful thyroid study, it was decided that she needed no specific therapy. Her brother, a physician, had noted that during the past eight years, her pulse rate was often in the range of 100 to 115, but that she had showed no evidence of hyperthyroidism other than goiter and occasional tachycardia.

On admission, she had a temperature of 100.2 F, a pulse rate of 100, a respiratory rate of 20, and blood pressure of 120/80 mm. Hg. She was an apprehensive, slightly undernourished, and acutely and chronically ill woman. A slight diffuse enlargement of the thyroid was evident. A few moist rales were present at both posterior lung bases. Cardiac examination revealed the point of maximal impulse to be in the sixth intercostal space at the anterior axillary line. The heart tones were normal. There was a grade 2 blowing apical systolic murmur that was poorly transmitted. Laboratory studies on admission revealed a red blood cell count of 3,950,000, a hemoglobin level of 11 gm. per 100 cc., and a white blood cell count of 3,800; the peripheral blood and bone marrow showed many L.E. cells; and the serum protein bound iodine content was 8 μg. per 100 cc. Urinalysis showed a 2+ amount of albumin, 10 red and 5 white blood cells per high power field, and one granular and one hyaline cast.

On May 7, 1951, the patient was placed on continuous intravenously administered corticotropin, 60 mg. per day, and within four days her blood pressure rose to 190/90 mm. Hg, and acute left ventricular failure developed. At this point corticotropin therapy was stopped and cortisone therapy was started (table 4). On May 15, the patient became voraciously hungry. On May 27, marked nervousness and tremor of the hands appeared, along with palpitation and a heart rate of 140. By June 11, a definite Cushing's state was present, with clinical evidence of hyperthyroidism, which had become much more apparent during hormone therapy. The significant results of laboratory tests at this time were as follows: basal metabolic rate, +27 and +44; serum protein bound iodine, 7.7 and 8.0 μg per 100 cc.; 24-hour radioactive iodine uptake, 122% and 58%; and serum cholesterol, 174 mg. per 100 cc. The hyperthyroidism was controlled with propylthiouracil and Lugol's solution, while a state below the Cushing level was maintained with cortisone therapy. At the time of appearance of the Cushingoid state, the clinical and laboratory evidences of systemic lupus erythematosus disappeared, including temporarily the L. E. cells. With treatment the patient's weight increased from 88 to 122 lb. (39.9 to 55.3 kg.).

SUMMARY

Spontaneous remissions in systemic lupus erythematosus occur in about 20% of untreated patients. Remissions can be induced by the use of corticotropin (ACTH) and cortisone. The dosage required to do this varies with the severity of the disease, and in the far advanced cases it may be impossible to bring about remissions, even with the use of large amounts of these hormones. If a "Cushingoid" appearance is obtained, a simultaneous remission usually occurs. To date, no patient in whom a Cushing's state has been induced and maintained has died. The remission must be maintained on small doses of corticotropin or cortisone. Differentiation of symptoms of systemic lupus erythematosus from complications of therapy is important; convulsions, psychoses, and edema from either cause may have similar manifestations. Hypersensitivity to the immediate pressor effects of corticotropin was observed in all patients at the Cushingoid level.

Female patients with active systemic lupus erythematosus were given massive doses of testosterone esters for several weeks, with no resulting virilization until a remission was induced. Clinical and laboratory evidence of hyperthyroidism occurred in two of eight patients treated with massive doses of both corticotropin and cortisone.

There is no definite evidence that treatment with corticotropin or cortisone will prolong life expectancy; however, there is no question that these agents are, at present, the most effective weapons available for the treatment of systemic lupus erythematosus.

ADDENDUM

An additional 15 patients have been treated in accordance with the regimen suggested, bringing the total treated to 45. In only 2 of these 15 was it impossible to produce a remission or Cushing's state after intravenous administration of corticotropin in doses up to 600 mg. per day. One patient has been brought out of crises by treatment with 2,400 mg. of cortisone per day for 3 days. There are now 21 patients in the continuous treatment group, the patient with the longest treatment period having received hormone therapy for 18 months. Duration of the disease for this group as of June 1, 1952, is a median of 30.5 months, an arithmetic mean of 36.1 months, and a geometric mean of 27.3 months, which is an improvement over our control series. No ill effects have been noted from long term cortisone therapy, such as osteoporosis, psychosis, or perforated ulcers; however, three patients have had spontaneous thrombophlebitis.

Advanced renal damage of the nephrotic type appeared in five patients in the total series. The early mild nephropathies clear with therapy. Two patients in whom mild renal damage developed while they were receiving maintenance doses of cortisone and in whom it cleared temporarily with an elevation of the maintenance dose had a recurrence of severer renal damage several months later. This severe nephropathy was refractory to doses of cortisone high enough to produce hypertensive encephalopathy and a marked Cushing's state. Both patients subsequently died; in one pulmonary tuberculosis developed after 13 months of cortisone therapy, and the other had a cerebral hemorrhage secondary to hypertension from the renal lesion after 15 months of therapy. These patients and most of the others would have died much sooner or would have spent their last months in the hospital without the aid of hormone therapy. Of the other three patients who had severe renal lesions, in one (F. B.) it developed 14 months after a short course of corticotropin was given, in the second it developed before therapy of any type was given, and in the third it developed during maintenance therapy. Increasing the cortisone dose in each case to the end point mentioned above did not affect the kidney damage. Three of the 5 patients were given nitrogen mustard intravenously up to a total

of 60 mg. over a 6 month period, without effect on the nephropathy. Three of these patients also received testosterone and cortisone to the point at which virilization occurred, with marked clitoral enlargement, with no amelioration of the kidney damage. One of these also had severe lupus myocarditis (Libman-Sacks syndrome), which was not affected by the above treatment. All the other patients are alive and are leading relatively normal lives.

Systemic lupus erythematosus, which was hitherto thought to be rare, is being diagnosed as frequently as is classic pernicious anemia at this hospital. The incidence of spontaneous remissions is about 20 to 40%, and it is suggested that patients with milder cases be observed during a rest period of several weeks prior to starting treatment, because the frequency of occurrence of spontaneous remissions seems to be lowered by therapy. Of the 21 patients receiving maintenance doses of cortisone, 19 have received them for over 2 months, and of these only 2 have been able to discontinue treatment without relapses occurring within 3 months — one after 11 months of therapy and the other after 3 months.

We feel strongly that the usual cause of failure of response of patients with systemic lupus erythematosus and other diseases that usually respond to these hormones is inadequate dosage. The obvious clinical appearance of a Cushing's state rather than stereotyped dosage schedules should be used as an end point to determine the effectiveness of therapy.

1200 N. State St. (Dr. Dubois).

CORTICOTROPIN AND CORTISONE IN ACUTE DISSEMINATED LUPUS ERYTHEMATOSUS

RESULTS OF LONG-TERM USE

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and
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This report is concerned with the results of a prolonged study of a group of 18 patients (12 female and 6 male) with acute disseminated lupus erythematosus treated with corticotropin (ACTH) and cortisone and followed for 3 to 20 months thereafter. In several previous papers [1] we have reported on the prompt response of the fever, rash, arthritis, pleuritis, and pericarditis to treatment with these agents, in contrast to the persistence of L. E. cells and renal damage.[1c, d] Since these earlier reports, further studies have provided an opportunity to evaluate the hazards of therapy in patients with varying degrees of organ involvement and have served to clarify those clinical features that are of prognostic importance.

The major clinical manifestations present in this group are listed in table 1. The ratio of females to males was 2:1, the incidence in males being much greater [2] than has been previously reported.[3] This apparent increase in the number of cases reported in males is probably the result of newer diagnostic criteria, including the use of the L. E. cell phenomenon and the lesser emphasis placed on the presence of the facial rash. The majority of patients were between the ages of 10 and 40 years (six between 10 and 19, four between 20 and 29, and six between 30 and 39), but the occurrence of two cases in the 50 to 59 year group points up the importance of making L. E. cell preparations in patients of this age, particularly in those who are suspected of having rheumatoid arthritis.

The long list of clinical manifestations emphasizes the protean character of this illness. Fever was a universal finding in all patients. Arthritis was not always present on admission but almost invariably occurred at some time during the course of the disease. The characteristic "butterfly" facial eruption was present in 11 of the 18 patients. The mucous membrane lesions that occurred in half the patients were evident on the buccal or gingival mucous membranes and consisted of flat, shallow ulcerations surrounded by an erythematous margin. Renal damage was common. All patients had microscopic hematuria of some degree. Fourteen patients had hyaline and granular casts in the urine. Persistent elevation of the urea nitrogen level of the blood above 25 mg. per 100 cc. was present in five patients, in two of whom a frank nephrotic syndrome developed.

Anemia, leukopenia, and thrombocytopenia were frequently observed. Studies of the sternal bone marrow in the 18 patients revealed variable findings. Bone marrow cellularity was increased in four patients and decreased in an equal number. Megakaryocytes were increased in one patient and decreased in two patients. Erythroid activity was decreased in four patients and increased in one. An increased percentage of myeloid elements was found in four. Acquired hemolytic anemia, which occasionally occurs in patients with acute disseminated lupus erythematosus, was not present in this group. Recently three such cases were reported by Dubois, who found a positive Coombs' reaction in all three.[4]

From the Endocrine Research Laboratory and Clinic and the Medical Services of the Mount Sinai Hospital.

1. (*a*) Baehr, G., and Soffer, L. J.: Treatment of Disseminated Lupus Erythematosus with Cortisone and Adrenocorticotropin, Bull. New York Acad. Med. **26**: 229, 1950. (*b*) Baehr, G., and others: The Influence of Cortisone and Adrenocorticotropin in Disseminated Lupus Erythematosus, Tr. A. Am. Physicians **63**: 89, 1950. (*c*) Soffer, L. J.; Levitt, N. F., and Baehr, G.: Use of Cortisone and Adrenocorticotropic Hormone in Acute Disseminated Lupus Erythematosus, Arch. Int. Med. **86**: 558 (Oct.) 1950. (*d*) Soffer, L. J.; Baehr, G.; Levitt, M. F., and Bader, M.: The Use of Adrenocorticotropin and Cortisone in Acute Disseminated Lupus Erythematosus, Proceedings of the Second Clinical ACTH Conference, Philadelphia, The Blakiston Company, 1951, vol. 2, p. 680.

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4. Dubois, E. L.: Acquired Hemolytic Anemia as the Presenting Syndrome in Lupus Erythematosus Disseminatus, Am. J. Med. **12**: 197, 1952.

The L. E. cell [5] was demonstrated in all patients in this group in both the peripheral blood and the sternal marrow. The characteristic cell is a polymorphonuclear leukocyte, containing a large, round homogeneous inclusion body, which is stained by basic dyes and is Feulgen-positive. It can be demonstrated in the peripheral blood and sternal marrow of most patients with acute disseminated lupus erythematosus. In a fairly large group of patients with this disease, not all of whom are included in the present series, L. E. cells were found in 96%.[5c] Of the cases in which postmortem examination failed to confirm the antemortem diagnosis of lupus erythematosus, the typical cells were found during life in only one. The inclusion body of the L. E. cell consists of altered nuclear material derived from polymorphonuclear leukocytes and lymphocytes.[5c] It contains partially depolymerized desoxyribosenucleic acid and is identical optically and chemically with the hematoxylin-staining body described as pathognomonic of lupus erythematosus.[6] In all instances in which the L. E. cell was demonstrated in the bone marrow, it could be found with equal facility in the peripheral blood.

TREATMENT

All patients in this group were hospitalized for long initial periods, varying from three to nine months, in order that we might evaluate closely drugs, dosage, and complications. A careful and complete investigation, including several blood cultures, was conducted in each case. A preliminary routine trial period of therapy with an antibiotic was instituted prior to treatment with cortisone or corticotropin. All patients were given a 200-mg. (8.5-mEq.) sodium diet obtained from a special diet kitchen. The weight and blood pressure were recorded daily. Mercurial diuretics were employed in those patients in whom edema developed as a result of therapy; when congestive failure was a factor, digitalis was also used. For the correction of the hypochloremic alkalosis and hypopotassemia encountered during treatment, potassium chloride was administered orally, 2 to 6 gm. a day.

The initial daily dose of corticotropin was 100 mg., given intramuscularly in divided doses, and that of cortisone 200 to 300 mg., given either by mouth or parenterally. The daily amount of either drug was then gradually reduced unless there was a recrudescence of symptoms. Ultimately most patients were managed with a daily maintenance dose of 20 to 50 mg. of corticotropin or 50 to 100 mg. of cortisone. In some instances it was eventually possible to discontinue therapy entirely for variable periods of time, depending on the duration of the remission.

On discharge from the wards the patients were followed in a special therapy clinic under the supervision of the same group of investigators. The patients were seen weekly or biweekly, and parenteral treatment with either agent was self-administered according to the time schedule instituted on the ward service. Later most of the patients received cortisone orally every six to eight hours. No special therapeutic effect was noted from the use of corticotropin or cortisone that recommended use of one agent in preference to the other. The convenience of oral administration of cortisone determined its more widespread use in the group. In general two to two and a half times as much cortisone as corticotropin was necessary to obtain a similar therapeutic effect.

During the hospital stay weekly determinations were made of the blood urea nitrogen, fasting blood sugar, serum chloride, serum carbon dioxide content, serum potassium, serum sodium, serum albumin and globulin, serum cholesterol and esters, and erythrocyte sedimentation rate. Electrocardiographic tracings and x-ray studies of the chest were made at weekly intervals at the beginning and every two weeks thereafter unless specifically indicated. Electroencephalographic studies were performed in 11 cases. Electrophoretic patterns were determined serially in 5 cases and repeated serum hexosamine determinations in 11. Similar studies were conducted in the outpatient department at monthly intervals.

TABLE 1.—*Clinical Manifestations in Eighteen Patients with Acute Disseminated Lupus Erythematosus*

Signs and Symptoms	No. of Patients
Fever	18
Arthritis	18
L. E. cells	18
Renal damage	
Microscopic hematuria	18
Microscopic hematuria and formed elements	14
Persistent azotemia	5
Elevated sedimentation rate	16
Anemia	16
Weight loss	14
Leukopenia	12
Lymphadenopathy	12
Rash	
Face	11
General	11
Thrombocytopenia	10
Mucous membrane lesions	9
Pericarditis and pericardial effusion	9
Pleurisy and pleural effusion	9
Organic mental syndrome	7
Fundal changes	7
Electroencephalographic abnormalities	6
Petechiae or purpura	6
Cachexia	5
Palpable spleen	4
Abdominal pain	4
Raynaud's phenomenon	3
Nephrotic syndrome	2

EFFECTS OF THERAPY

The effects of therapy on the specific manifestations of the disease are listed in table 2. In general, there was a rather prompt and marked improvement in the sense of well-being of the patients, associated with an increase in appetite and a decrease in irritability and depression. These changes were often evident within 24 hours after the beginning of corticotropin or oral cortisone therapy and within three to four days with intramuscularly administered cortisone. Within this period the temperature returned to normal levels unless some associated intercurrent infection was present. The serous membrane involvement responded rapidly. Joint pain and pleural and pericardial pain disappeared within one to three days and

5. (*a*) Hargraves, M. M.; Richmond, H., and Morton, R. J.: Presentation of 2 Bone Marrow Elements: "Tart" Cell and "L. E." Cell, Proc. Staff Meet., Mayo Clin. **23**: 25, 1948. (*b*) Haserick, J. R.: Plasma L. E. Test in Systemic Lupus Erythematosus: Study of 23 Patients with Positive L. E. Tests, J. A. M. A. **146**: 16 (May 5) 1951. (*c*) Lee, S. L.; Michael, S. R., and Vural, I. L.: The L. E. (Lupus Erythematosus) Cell: Clinical and Chemical Studies, Am J. Med. **10**: 446, 1951.

6. Klemperer, P., and others: Cytochemical Changes in Acute Disseminated Lupus Erythematosus, Arch. Path. **49**: 503 (May) 1950.

pleural effusions within one to three weeks. Abdominal pain, a common manifestation of the disease and generally associated with perihepatitis and perisplenitis, subsided within one to three days. This effect of therapy is probably related to subsidence of the inflammatory process, since neither corticotropin nor cortisone exercises any analgesic effects.[7]

TABLE 2.—*Response to Therapy*

Signs and Symptoms	No. of Patients	Results
Fever	18	Disappeared in 1-2 days with corticotropin or oral cortisone therapy, in 3-5 days with intramuscular cortisone therapy
Arthritis	18	Disappeared within 1 week
Renal damage		
Microscopic hematuria	18	Persisted
Formed elements	14	Persisted
Azotemia	10	Persisted in 5, returned to normal in 5
L. E. cells	18	Persisted
Elevated sedimentation rate	16	Increased in 6, decreased in 5, no change in 7
Anemia	16	Improved in 5, unaltered in 8, worse in 3
Leukopenia	12	Increase in WBC in 9, no change in 5, reduction in 4
Rash	11	Faded slowly during first 2-4 weeks of therapy
Thrombocytopenia	10	Improved in 5
Mucous membrane involvement	9	Cleared within 7-14 days
Pericarditis	9	Effusions cleared in 1-3 weeks; pain cleared in 1-3 days
Pleurisy	9	Effusions cleared in 1-2 weeks
Organic mental syndrome	7	Cleared in 1 week
Retinal abnormalities	7	Cleared slowly
Petechiae or purpura	6	Disappeared in 1 week
Cachexia	5	Improved slowly
Abdominal pain	4	Subsided in 1-3 days
Raynaud's phenomenon	3	Subsided in 3-4 days

The skin lesions cleared slowly, usually within two to four weeks. When telangiectasia was a component of the erythematous eruption, the former persisted although the latter disappeared. In several patients the bright erythematous eruption changed to a spotty brownish pigmentation, which then slowly disappeared. The mucous membrane lesions similarly eventually healed in the nine patients in whom they were present.

In three patients Raynaud's phenomenon was a prominent feature of the disease. This promptly disappeared with treatment, but just as promptly recurred when the dosage of the drugs was reduced to inadequate levels.

The organic mental syndrome associated with the systemic toxicity and febrile state cleared as soon as the general febrile state improved. Before treatment was started these patients were disoriented as to time and place; the stream of speech was incoherent, content of thought illogical, judgment impaired, and ability to calculate poor. This mental pattern cleared promptly with therapy.

In 6 of 13 cases the electroencephalographic pattern was abnormal prior to therapy, being characterized by slow, three to six cycles per second, activity. In three patients the pattern reverted to normal during treatment. It is our feeling that the presence of an organic mental syndrome in this illness does not constitute a contraindication to therapy. The importance of convulsions as a complication will be discussed later.

Retinal lesions, observed in seven cases, were characterized by perivascular exudates, hemorrhages, and segmentation of the blood vessels. These slowly cleared in every instance. In patients with severe relapse, preterminal or uremic retinal lesions reappeared. The sedimentation rate was elevated in 16 patients, and its response to treatment was variable. There was an increase in the sedimentation rate in six, a decrease in five, and no change in seven patients. Since corticotropin and cortisone therapy may exert a nonspecific effect on the sedimentation rate,[8] its value as a clinical index when these agents are employed is questionable.

The effects on the blood are listed in table 3. Anemia was present in 16 of the 18 patients. Of these, five improved slowly, eight showed no significant change, and in three the anemia became more marked. Two of these three succumbed to progressive renal failure with azotemia. Leukopenia was present in 12 patients. With therapy, nine showed an increase in the total white blood cell count, in five no change occurred, and in four there was a further progressive fall. The platelet count, which was less than 150,000 in 10 patients, increased in half of this group.

TABLE 3.—*Hematological Changes with Therapy*

Case No.	Hemoglobin, Gm./100 Cc.		Red Blood Cells, Millions/ Cu. Mm.		White Blood Cells/ Cu. Mm.	
	Before Therapy	After Therapy	Before Therapy	After Therapy	Before Therapy	After Therapy
1	8.7	12.0	3.0	3.8	5,600	9,600
2	8.0	9.5	3.0	3.0	3,800	9,600
3	9.0	6.0	3.4	2.0	3,600	4,300
4	11.5	12.0	3.7	4.0	6-7,000	6,500
5	8.8	7.0	3.0	2.5	4,600	1,850
6	8.8	9.0	2.7	2.7	2,800	12,000
7	8.0	9.5	3.0	3.5	7,200	8,850
8	11.5	9.5	3.8	3.5	9,400	3,500
9	14.0	12.5	4.4	4.2	3,500	7,500
10	11.0	7.0	3.3	2.9	5,000	3,000
11	9.0	11.5	3.0	3.5	4,500	4,500
12	10.0	13.0	3.85	4.0	4,200	5,600
13	6.0	13.5	2.16	4.1	5,200	9,600
14	14.0	14.5	5.5	5.3	5,400	5,200
15	7.8	12.0	2.5	4.1	3,500	5,400
16	9.0	9.0	3.3	3.3	1,900	2,000
17	11.0	10.5	3.7	3.3	7,000	10,000
18	10.0	12.5	3.5	4.6	7,000	6,000

The plasma protein changes seen in patients with acute disseminated lupus are characterized by a decrease in the serum albumin fraction and an elevation in the serum alpha$_2$ and gamma globulin.[9] The total serum proteins may or may not be decreased. In the 18 (table 4) patients hyperglobulinemia was present in 16 and hypoalbuminemia in 15. The total protein values were within the normal range in all. With therapy there was an increase in the serum albumin fraction in 10, a decrease in

7. Groekest, A. W.; Baillancourt, deG.; Gottsegen, R., and Ragan, C.: Lack of an Analgesic Effect of Cortisone and ACTH, J. Clin. Investigation **30**: 644, 1951.

8. Robinson, W. D.; Wolfson, W. Q., and Duff, I. F.: The Significance of Sedimentation Rate Changes During ACTH Therapy, Proceedings of the Second Clinical ACTH Conference, Philadelphia, The Blakiston Company, 1951, vol. 2, p. 549.

9. (*a*) Coburn, A. F., and Moore, D. H.: The Plasma Proteins in Disseminated Lupus Erythematosus, Bull. Johns Hopkins Hosp. **73**: 196, 1943. (*b*) Reiner, M.: Effect of Cortisone and Adrenocorticotropin Therapy on Serum Proteins in Disseminated Lupus Erythematosus, Proc. Soc. Exper. Biol. & Med. **74**: 529, 1950.

4, and no change in 4 patients. There was a reduction in the serum globulin in 11 patients, an increase in 4, and no change in 3. Serial electrophoretic patterns were obtained in five patients (table 5). Treatment was followed by an increase in the serum albumin, a fall in the serum gamma globulin, and no change in the serum alpha$_2$ globulin.[9b] It has been suggested that the duration and activity of the disease process is roughly correlated with the degree of elevation of the gamma globulin fraction and the depression of complement activity. During treatment with corticotropin the complement titer of the blood tends to rise and the gamma globulin level to fall.[10]

TABLE 4.—*Plasma Protein Changes with Therapy*

	Plasma Proteins (Gm./100 Cc.)					
	Before Therapy			After Therapy		
Case No.	Albumin	Globulin	Total Protein	Albumin	Globulin	Total Protein
1	2.2	4.3	6.5	4.0	3.3	7.3
2	2.5	5.0	7.5	3.0	3.5	...
3	2.6	3.7	6.3	3.0	2.9	5.9
4	2.9	3.5	6.4	3.3	3.0	6.3
5	3.3	4.7	8.0	2.4	3.5	5.9
6	3.1	5.0	8.1	4.3	2.8	7.1
7	3.6	3.5	7.1	4.2	2.5	6.7
8	3.2	3.5	6.7	2.3	3.9	6.2
9	3.3	3.5	6.8	3.5	2.6	6.1
10	4.4	2.2	6.6	2.0	3.0	5.0
11	3.5	4.0	7.5	3.5	2.5	...
12	2.7	5.1	7.8	3.9	5.0	8.9
13	1.7	6.0	7.7	3.5	3.7	7.2
14	3.4	4.0	7.4	3.7	3.5	7.2
15	2.5	3.5	6.0	4.4	3.7	8.1
16	2.1	4.0	6.1	1.8	4.4	6.2
17	3.0	3.3	6.3	2.2	3.5	6.8
18	2.4	4.5	6.9	3.5	4.9	8.4

Two major clinical manifestations persist during both drug-induced and spontaneous remissions. These are the L. E. cell phenomenon and the renal lesions. The L. E. cells may disappear temporarily during remissions but can always be demonstrated at some time or another. One patient, not included in this series, who had had a spontaneous remission for five years consistently, still showed L. E. cells in peripheral blood and bone marrow.

The renal injury observed in patients with acute disseminated lupus is persistent and is of grave prognostic significance. Of the 18 patients studied, all had microscopic hematuria. Formed elements (hyaline and granular casts) were present in 14. An elevation of the blood urea nitrogen level to over 25 mg. per 100 cc. was present in 10 patients. In five instances the blood urea nitrogen returned to normal levels rapidly, coincident with alleviation of the fever and improved hydration. Five patients had persistent azotemia despite vigorous therapy. Of these, three died, two with a blood urea nitrogen level exceeding 100 mg. per 100 cc. and one with a level exceeding 50 mg. per 100 cc. Postmortem studies were conducted on two of these three patients. In one the kidneys were large and pale, such as is seen in patients with subacute nephritis with a nephrotic syndrome. The characteristic renal lesions of acute disseminated lupus erythematosus were observed microscopically in both patients. Of 13 patients without persistent azotemia but with microscopic hematuria, 3 died of causes unrelated to renal insufficiency. It should be noted, however, that an initial elevation of the blood urea nitrogen level is not necessarily a reliable index of renal damage, since in half the patients a rapid return to normal levels occurred with alleviation of the fever and dehydration. The prognostic importance of persistent renal abnormalities with therapy has been emphasized in previous reports,[1c, d] and short-term studies of renal function have failed to reveal any improvement with treatment.[11]

Of interest is the effect of therapy on the serum hexosamine levels.[12] It has been known for a considerable time that a material containing hyaluronic acid and probably chondroitin sulfate is present as a metachromatically staining amorphous ground substance, which swells tissues and separates connective tissue fibers in patients with disseminated lupus erythematosus. Since hexosamine constitutes the greater part of the mucopolysaccharide molecule and is present in the serum as bound hexosamine (glucosamine and galactosamine), the levels of this fraction were studied in the patients with collagen diseases. In a group of 19 patients with disseminated lupus erythematosus, 17 were found to have elevated serum hexosamine levels. Such increases are by no means limited to patients with this disease but are frequently encountered in those with acute disorders, e. g., coronary thrombosis and severe acute infections, as well as in patients with chronic illnesses, such as Hodgkin's disease, leukemia, periarteritis nodosa, and carcinomatosis. In 11 patients of our group with acute disseminated lupus erythematosus receiving treatment with corticotropin and cortisone the serum hexosamine levels were followed serially for many weeks. In all of them the serum hexosamine levels were consistently lowered during periods of spontaneous remission and clinically effective therapy.

COMPLICATIONS OF THERAPY

A summary of the complications is listed in tables 6 and 7. It will be noted that hypertension occurred at some time during treatment in nine patients. Prior to therapy all but one of the patients had normal blood pressure readings. The one patient (case 6) had had a sympathectomy for hypertension six years before the present admission to the hospital. Normal blood pressure, and even hypotension, is a characteristic finding in patients

TABLE 5.—*Electrophoretic Patterns of Serum Proteins in Normal Subjects and in Patients with Disseminated Lupus Erythematosus*

		Relative Percentage of Total Proteins				
			Globulins			
Subjects (No.)	Total Protein, Gm./100 Cc.	Albumin	Alpha	Alpha$_2$	Beta	Gamma
Normal subjects (2)....	7.2	56.8	7.2	8.7	12.8	14.4
Patients with untreated disseminated lupus erythematosus (20).....	6.9	33.3	7.3	15.4	12.8	31.1
Patients with disseminated lupus erythematosus before therapy (5)	7.0	34.7	8.1	12.5	15.1	29.6
Patients with disseminated lupus erythematosus after therapy (5)	6.1	44.0	7.2	12.7	16.6	19.5

10. Vaughan, J. H.; Bayles, T. B., and Favour, C. B.: The Response of Serum Gamma Globulin Level and Complement Titer to Adrenocorticotropic Hormone (ACTH) Therapy in Lupus Erythematosus Disseminatus, J. Lab. & Clin. Med. **37**: 698, 1951.

11. Heller, B. I.; Jacobsen, W. E., and Hammarsten, J. F.: Effect of Cortisone in Glomerulonephritis and the Nephropathy of Disseminated Lupus Erythematosus, Am. J. Med. **10**: 520, 1951.

12. Boas, N. F., and Soffer, L. J.: The Effect of ACTH and Cortisone on the Serum Hexosamine in Acute Lupus Erythematosus, J. Clin. Endocrinol. **11**: 39, 1951.

with lupus and frequently aids in the differential diagnosis from periarteritis nodosa.

In most instances in which hypertension occurred with treatment, the pressure returned to normal levels with reduction of dosage of the drug. In four patients, however, the hypertension persisted. Of these, three died, two with azotemia; one had had an early elevation of the blood urea nitrogen level, which had later returned to normal levels. In the one living patient (case 6), with persistent hypertension and previous sympathectomy, the blood pressure continued to remain elevated despite considerable reduction in the dosage of the drug. Apparently, hypertension following therapy (even in patients on a daily 200 mg. [8.5 mEq.] salt diet) is not uncommon but is reversible except in those patients in whom renal damage complicates management.

TABLE 6.—*Complications of Therapy*

Complication	No. of Cases
Fulness of face	15
Edema	10
Congestive heart failure	10
Hypertension	9
Acne	7
Hirsutism	6
Alkalosis	6
Euphoria	5
Striae	5
Pigmentation	4
Convulsions	4
Depression	3
Psychosis	1
Diabetes mellitus	1
Osteoporosis	1

TABLE 7.—*Blood Pressure Changes During Therapy*

Case No.	Blood Pressure Before Therapy	Peak Blood Pressure During Therapy
1	95/60	150/100
2	120/80	160/100
3	110/70	160/100
4	110/70	150/90
5	95/50	100/70
6	135/90	200/140
7	95/70	135/85
8	110/65	160/115
9	100/60	160/110
10	105/70	160/110
11	90/60	110/80
12	100/60	110/80
13	100/40	120/90
14	110/70	130/85
15	115/70	120/90
16	110/70	130/70
17	110/70	120/80
18	110/70	180/120

Edema, usually pretibial in location, occurred in 10 patients and was readily controlled with mercurial diuretics.

The mental changes occurring with treatment are of considerable importance.[13] As mentioned previously, the original organic mental syndrome cleared, and of six abnormal electroencephalograms three reverted to a normal pattern. However, mental changes directly associated with therapy subsequently appeared in their stead. Depression occurred in three patients and euphoria in five. These manifestations were generally in excess of the normal effects appropriate to their condition at the time. One patient was overtly psychotic, with marked infantile behavior and paranoid ideas. With reduction in the dosage of the drug most of these initial mental changes tended to disappear. In the patient with the psychotic pattern the mental aberrations promptly cleared with cessation of treatment and subsequently did not recur with reinstitution of therapy. This patient's father had committed suicide, and her mother had been hospitalized in a mental institution.

Convulsions occurred in four patients. Two were patients who were preterminal; in one, the convulsive episodes were associated with septicemia, and one was in status epilepticus, which progressed to death. Convulsions occurring preterminally in patients with acute disseminated lupus erythematosus were not infrequently observed in the days before treatment with corticotropin and cortisone.[14] It is possible that the condition in the first two patients is in the category of disease-induced rather than drug-induced convulsions. The convulsions occurring in the patient with associated septicemia due to Staphylococcus aureus were perhaps attributable to this complication. The patient with status epilepticus was a 12-year-old girl who had a convulsive state on the eighth day of corticotropin therapy. Despite the prompt discontinuance of treatment, however, the patient continued to have recurrent seizures, which could not be controlled with the usual anticonvulsive measures, and the patient ultimately died of pulmonary edema. Dorfman and his co-workers [15] have reported four instances of status epilepticus following corticotropin therapy. These patients had dermatomyositis, rheumatic fever, periarteritis nodosa, and disseminated lupus erythematosus. It is perhaps of interest that cortisone therapy lowers the threshold to electroshock of the brain of the rat.[16] Ransohoff [17] has reported reversal of psychosis and electroencephalographic changes with the intravenous administration of potassium.

Acne and hirsutism occurred in approximately one-third of the group. These changes were reversible when treatment was discontinued. The hirsutism consisted of soft, fine hair growth on the upper lip, the back of the neck, and the sides of the face. A slight to moderate roundness and fulness of the face appeared in 15 patients, which tended to disappear when the dosage of the drug was reduced or treatment stopped entirely. Similarly, bright red abdominal striae occurred in five patients. These changes persisted only as long as treatment was continued. Hypochloremic alkalosis was observed in six patients. This was frequently associated with hypopotassemia of varying degree. To correct this defect we gave potassium chloride either orally or parenterally in

13. Hoefer, P. F. A., and Glaser, G. H.: The Effects of Pituitary Adrenocorticotrophic Hormone (ACTH) Therapy: Electroencephalographic and Neuropsychiatric Changes in Fifteen Patients, J. A. M. A. **143**: 620 (June 17) 1950.

14. Klemperer, P.; Pollack, A. D., and Baehr, G.: Pathology of Disseminated Lupus Erythematosus, Arch. Path. **32**: 569 (Oct.) 1941.

15. Dorfman, A., and others: Status Epilepticus Coincident with the Use of Pituitary Adrenocorticotropic Hormone: Report of 3 Cases, J. A. M. A. **146**: 25 (May 5) 1951.

16. Woodbury, D. M.; Cheng, C.; Sayers, G., and Goodman, L. S.: Antagonism of Adrenocorticotropic Hormone and Adrenal Cortical Extract to Desoxycorticosterone: Electrolytes and Electroshock Threshold, Am. J. Physiol. **160**: 217, 1950.

17. Ransohoff, W., and others: The Effect of Sodium and Potassium on the Metabolic and Physiologic Responses to ACTH, Proceedings of the Second Clinical ACTH Conference, Philadelphia, The Blakiston Company, 1951, vol. 1, p. 160.

doses of 2 to 6 gm. daily. An increase in hypochloremic alkalosis usually followed the administration of mercurial diuretics, and in such patients potassium chloride was administered regularly for several days after each mercurial injection.

Congestive heart failure occurred in 10 patients during treatment. In most instances this was evidenced primarily by a gallop rhythm and some hepatic engorgement. In two instances pulmonary edema occurred as a terminal event. The importance of rigid salt restriction must be emphasized, particularly in an illness such as disseminated lupus erythematosus in which cardiac damage so often occurs as part of the disease process. However, even in the absence of any gain in over-all body weight there is an increase in the extracellular space as measured by inulin of 20% to 30%, usually occurring on the eighth or ninth day of therapy. This increase is in the form of a relatively isotonic extracellular fluid and is accompanied by a smaller, but variable, increase in the glomerular filtration rate and renal plasma flow and a minimal increase in the plasma volume. These changes reach a maximal peak on the eighth or ninth day of treatment.[18] These changes slowly revert to the previous state if therapy is either continued or stopped. This considerable increase in the extracellular fluid volume probably contributes to the congestive failure. In most cases heart failure responded promptly to the use of mercurial diuretics and digitalization. The electrocardiographic changes were variable. S-T interval and T wave changes suggestive of pericarditis cleared, but T wave inversions developed in others with therapy. Arrhythmias were seen in five patients, of whom two showed transient auricular fibrillation; one had auriculoventricular block, which reverted to normal with treatment, one had nodal extrasystoles and transient nodal rhythm; and one had a 2:1 auriculoventricular block during a period of congestive failure, which responded well to therapy.

Diabetes mellitus occurred as a complication in one patient. With a dosage of 80 mg. of corticotropin daily this patient exhibited marked glycosuria and a fasting blood sugar level of 320 mg. per 100 cc., although the blood sugar level before the beginning of treatment had been 80 mg. per 100 cc. The patient was in negative nitrogen balance and had marked weight loss associated with polydypsia and polyuria. Eighty units of insulin daily were required to control the glycosuria and hyperglycemia. However, as the daily dose of corticotropin was reduced the insulin requirements became progressively less and eventually could be discontinued entirely. It is interesting to note that this patient had a history of diabetes in his immediate family. The influence of corticotropin and cortisone therapy on carbohydrate metabolism has been well documented,[19] but none of the remaining 17 patients showed any evidence of impaired carbohydrate tolerance during treatment.

Osteoporosis occurred during therapy in one patient, a woman 58 years of age. Roentgenographic study of the spine revealed marked osteoporosis with a compression of the 1st lumbar vertebra and narrowing of the 12th thoracic vertebra. It was our impression that this patient had some postmenopausal osteoporosis that had been intensified by the use of cortisone. After the prolonged administration of methyltestosterone, there occurred a considerable decrease in the back pain, but this was not associated with any roentgen evidence of an increase in calcification of the vertebral column.

RESULTS OF PROLONGED THERAPY

The results of the long-term follow-up are listed in table 8. Therapy was begun as long ago as 20 months prior to writing and as recently as 3 months prior to writing in this series. Sixteen of the 18 patients were followed for 11 to 20 months. One patient (case 5) had only two short courses of three days each, to which she responded well, but she died because of unavailability of the drug during the early period of this study. Eight patients received continuous treatment for periods varying from 3 to 19 months. Nine patients were without therapy for intervals of a week to as long as 11.5 months.

TABLE 8.—*Duration of Therapy and Results*

Case No.	Months of Therapy	Longest Interval Without Therapy	Status as of June 1, 1951	Drugs Used	Average Daily Maintenance Dose (Mg.)
1	15	7 mo.	Without therapy	Corticotropin	40
2	14	3 mo.	Without therapy	Corticotropin Cortisone *	40 25-50
3	15	0	Died after 9 mo. of therapy	Corticotropin Cortisone † Cortisone *	30-50 50-100 50-100
4	15	1-2 weeks	Therapy continued	Cortisone † Corticotropin Cortisone *	25-50 10 25
5	20	Constantly except for 2 three-day courses	Died	Corticotropin	..
6	3	0	Therapy continued	Corticotropin Cortisone *	20-40 50-100
7	5	0	Therapy continued	Corticotropin Cortisone *	10-20 18-25
8	12	2 mo.	Therapy continued	Corticotropin Cortisone *	.. 50-100
9	11	1 week	Died after 11 mo. of therapy	Cortisone † Cortisone *	50-100 50-100
10	17	0	Died after 15 mo. of therapy	Corticotropin Cortisone † Cortisone *	45-60 100 100
11	20	3 mo.	Therapy continued	Corticotropin Cortisone	50 100
12	17	0	Therapy continued	Cortisone † Corticotropin Cortisone *	75-100 45-50 100
13 ‡	13	11½ mo.	Without therapy	Corticotropin	..
14	12	10 mo.	Without therapy	Cortisone *	50-0
15 §	13	6 mo.	Therapy continued	Corticotropin Cortisone *	.. 50-100
16	15	0	Died after 12 days of therapy	Corticotropin	..
17	15	0	Died after 38 days of therapy	Cortisone † Corticotropin	100 45
18	19	0	Therapy continued	Cortisone † Corticotropin Cortisone *	50-100 45-55 75-100

* Given orally.
† Given intramuscularly.
‡ The dose was tapered off over 83 days.
§ The dose of corticotropin was tapered off over 72 days.

At present 12 patients are living and 6 are dead. Eight of these 12 patients require continuous treatment and are being maintained with 50 to 100 mg. a day of corti-

18. Levitt, M. F., and Bader, M. E.: Effect of Cortisone and ACTH on Body Water and Electrolyte Distribution, J. Clin. Investigation **30**: 655, 1951.

19. Ingle, D. J.: The Production of Glycosuria in the Normal Rat by Means of 17-Hydroxy-11-Dehydrocorticosterone, Endocrinology **29**: 649, 1941. Conn, J. W.; Louis, L. H., and Wheeler, C. E.: Production of Temporary Diabetes Mellitus in Man with Pituitary Adrenocorticotropic Hormone: Relation to Uric Acid Metabolism, J. Lab. & Clin. Med. **33**: 651, 1948.

sone, administered orally. Aside from the difference in potency, milligram for milligram, between corticotropin and cortisone, no differences in therapeutic effect are evident between the two agents.

The effect of prolonged use of either agent on endogenous production of the respective hormones is difficult to evaluate. It has been our custom to taper off gradually when using each drug to allow endogenous production to increase. Hypoadrenocorticism has been reported after sudden withdrawal of cortisone in the treatment of lymphomatous diseases.[20] Experimentally, cortisone is capable of inducing a decrease in adrenal cortical size, and clinically some impairment of adrenal cortical function occurs, as evidenced by a decrease in the urinary excretion of the neutral 17-ketosteroids and failure of such adrenals to respond adequately to subsequent stimulation with corticotropin. However, such refractoriness is only transient and disappears within several days to several weeks after treatment with cortisone is discontinued.

SUMMARY

Eighteen patients with disseminated lupus erythematosus were treated with corticotropin (ACTH) and/or cortisone for periods of from 3 to 20 months. Of this group, 6 have died and 12 are living, of whom 8 continue with treatment. The clinical manifestations of the disorder are described. The incidence in males was greater in this series than previously noted.

Treatment with corticotropin or cortisone in adequate doses caused prompt remission in fever, arthritis, pleuritis, pericarditis, Raynaud's phenomenon, and the organic mental syndrome. The rash, mucous membrane lesions, retinal lesions, and serous effusions cleared more slowly. The anemia improved slowly in those patients with minimal or no renal damage. The lupus cells persisted despite a remission in the disease, although at times they disappeared temporarily. Renal damage tended to persist. Microscopic hematuria was present in all patients and formed elements in the urine in 14 of 18 patients. Azotemia was present in 10 patients, but in 5 of this group the blood urea nitrogen level returned to normal levels after improvement in hydration. The persistence of azotemia is a serious prognostic sign.

The complications and hazards of treatment with corticotropin and cortisone are described. Despite the risks attendant on the use of these drugs, they constitute the most effective agents yet available for the treatment of this disease. It must be emphasized, however, that no actual cures result. It is possible that some patients may be maintained in a state of remission for an indefinitely prolonged period of time with judicious treatment.

Fifth Ave. and 100th St.

20. Eliel, L. P.; Pearson, O. H., and West, C. D.: Excessive Losses of Sodium, Chloride, and Water After Administration of Cortisone or ACTH, Suggesting Adrenocortical Insufficiency, abstracted, J. Clin. Investigation **30**: 637, 1951.

EFFECT OF HEPARIN IN CASES OF CORONARY INSUFFICIENCY

EVALUATION BY ELECTROCARDIOGRAPHIC TESTS

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In 1949 Gilbert and Nalefski [1] suggested that the favorable results observed from the use of anticoagulant drugs in cases of acute myocardial infarction and angina pectoris may be primarily the result of an increase in coronary blood flow. After this report we attempted to study the effects of heparin and bishydroxycoumarin (dicumarol®) on the electrocardiographic response to standard exercise (Master two-step test)[2] in several patients with coronary heart disease. The negative results obtained in four carefully selected cases discouraged an extensive study at that time.

Our interest was renewed recently, however, when Graham and associates [3] reported marked relief of symptoms in 55 of 59 patients with angina pectoris who had received weekly or biweekly injections of 50 to 100 mg. of heparin. The therapeutic response in these cases was judged from the frequency of anginal attacks and the requirements for glyceryl trinitrate. It was stated that relief from angina was commonly noted after the first few injections of heparin whereas the usual symptoms recurred when saline placebos were substituted for the drug. In the opinion of these authors the relatively small dosage and the infrequency of the injections speak against either a vasodilator or antithrombotic basis for the response. On the other hand, the dramatic relief of angina pectoris paralleled the profound effect of heparin on lipoprotein metabolism (characterized by a shift of particles of high S_f rates to those of successively lower S_f rates). The present study was undertaken for the purpose of determining whether this report of clinical improvement could be correlated with electrocardiographic evidence derived from the application of a standard exercise test.

In previous reports [4] we described an objective method for evaluating the action of various drugs upon the coronary circulation and/or myocardium in man. The technique requires the careful selection of subjects

A joint project with the National Heart Institute, United States Public Health Service, Washington, D. C.

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1. Gilbert, N. C., and Nalefski, L. A.: The Effect of Heparin and Dicumarol in Increasing the Coronary Flow Volume, J. Lab. & Clin. Med. **34**: 797, 1949.

2. Master, A. M.; Friedman, R., and Dack, S.: The Electrocardiogram After Standard Exercise as a Functional Test of the Heart, Am. Heart J. **24**: 777, 1942.

3. Graham, D. M., and others: Blood Lipids and Human Atherosclerosis II. The Influence of Heparin upon Lipoprotein Metabolism, Circulation **4**: 666, 1951.

with coronary disease who exhibit upon repeated tests under standard conditions a relatively constant positive response to measured exercise.

MATERIAL

After screening a large group of patients with coronary heart disease from the wards and the outpatient department, we selected 14 patients who appeared suitable for this study. In these subjects performance of the Master two-step test at varying intervals during the control period showed S-T segment and T wave changes that were relatively constant for each patient. The group consisted of 13 men and 1 woman, with ages ranging from 48 to 77 years. Of the 14 patients 9 presented the classical symptoms of angina pectoris. One patient was diabetic, and one patient had concomitant hypertensive vascular disease. The resting 12-lead electrocardiogram was normal in 3 and abnormal in 11 cases. Five of the latter exhibited clinical and electrocardiographic evidence of an old myocardial infarction. Abnormal ballistocardiograms were seen in all except one of the subjects (see table).

Summary of Findings in Fourteen Patients Before and After the Administration of Heparin

Case No.	Age, Yr.	Sex	Electrocardiogram	Ballistocardiogram *	Exercise Test Results	Angina	Diagnosis †	No. of Heparin Injections ‡	Effect of Treatment on Angina §
1	53	M	Normal	Normal	Positive	0	ASHD	7	Unchanged
2	77	M	Abnormal	IV	Positive	+	ASHD	4	Unchanged
3	53	M	Abnormal	III	Positive	+++	ASHD; old infaret	1	Unchanged
4	51	M	Normal	I	Positive	+	ASHD	5	Unchanged
5	49	F	Normal	II	Positive	++	ASHD	4	Slight improvement
6	53	M	Abnormal	II	Positive	+	ASHD; old infaret	2	Unchanged
7	61	M	Abnormal	III	Positive	0	ASHD; old infaret	1	Unchanged
8	50	M	Abnormal	III	Positive	0	ASHD	3	Unchanged
9	56	M	Abnormal	III	Positive	0	ASHD; old infaret	2	Unchanged
10	48	M	Abnormal	II	Positive	++++	ASHD; old infaret	4	Slight improvement
11	54	M	Abnormal	III	Positive	+	ASHD	4	Slight improvement
12	66	M	Abnormal	III	Positive	++	ASHD	4	Unchanged
13	52	M	Abnormal	II	Positive	+	ASHD; hypertension	1	Unchanged
14	55	M	Abnormal	I	Positive	0	ASHD; diabetes	4	Unchanged

* Classification according to Brown, H. R., Jr.; Hoffmann, M. J., and de Lalla, V., Jr.: Ballistocardiographic Findings in Patients with Symptoms of Angina Pectoris, Circulation 1:132, 1950.
† ASHD = arteriosclerotic heart disease.
‡ The dose was 100 mg. in all except cases 2 and 5 in which 50 mg. was given.
§ The results of the exercise test were unchanged by treatment in all cases.

METHOD

During the control period a series of tests was obtained in each patient under relatively standardized conditions. The studies were carried out in the cardiac laboratory at approximately the same time of day and by the same observers. In most instances the standard Master two-step test was employed. In three patients fewer ascents and descents of the two-step staircase than recommended for the patient's age and weight were performed, because of the severity of the anginal symptoms. In several patients a double Master two-step test was found necessary to produce significantly positive electrocardiographic alterations. In most instances only one test was performed in any 24 hour period. When the amount of exercise necessary to produce consistently positive responses in the individual patient had been established, the identical procedure was repeated five minutes after sublingual administration of glyceryl trinitrate (0.4 mg.). This was invariably followed by electrocardiographic evidence of improved exercise tolerance as shown by disappearance of or decrease in S-T segment depression and T wave changes. When these control observations were completed in each case, heparin was administered intravenously at varying intervals. Eight of the 14 patients received four or more doses of heparin, and in these the interval between injections varied from 1 to 3 days. The remaining six patients received one to three injections. The dose of heparin was 100 mg. for each injection except in two patients, in whom a 50 mg. dose was employed. The exercise electrocardiographic test was made 24 hours after the initial injection and on consecutive days thereafter in 12 of the 14 patients. In two patients the response was also evaluated immediately after the administration of heparin and 6 and 12 hours later. During the period of observation the patients with angina were carefully questioned regarding the frequency and severity of attacks and their requirements for glyceryl trinitrate.

RESULTS

Comparison of the control records taken prior to medication with those obtained after the administration of heparin failed to reveal any changes that could be

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interpreted as evidence of improved exercise tolerance. In two patients (cases 1 and 4 in the table), the tests performed 24 hours after the initial injection of heparin showed less S-T segment depression than that observed in the control records, but this effect was not sustained and was not demonstrable after subsequent heparin injections. In three patients subjective improvement in anginal attacks during or following the course of heparin was reported by the patients. The degree of improvement, however, was so slight that conclusions as to its significance appear to be unwarranted.

SUMMARY

The subjective improvement reported from the use of heparin in cases of angina pectoris suggested a study in which the effect of this drug on induced myocardial ischemia could be measured by an objective technique. By means of the Master two-step test 14 patients with varying degrees of coronary insufficiency were selected, because of the constancy of their electrocardiographic response during control periods. It was found that the intermittent administration of heparin in these subjects was without significant effect on the electrocardiographic response to standard exercise. The striking subjective improvement in anginal symptoms reported by others was not confirmed by this study.

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CLINICAL NOTES

DEATH DUE TO AGRANULOCYTOSIS INDUCED BY METHIMAZOLE THERAPY

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Since the introduction of thiouracil, the antithyroid activity of many compounds has been investigated.[1] In 1949, Stanley and Astwood [2] reported that methimazole (1-methyl-2-mercaptoimidazole, also known as "tapazole") was highly active in 30 cases of hyperthyroidism. Subsequently an additional 185 cases have been reported by various investigators.[3] All agree that the drug is highly effective. Only Bartels and Sjogren [3d] mention the occurrence of toxic reactions. In their series of 100 patients, 6 had a skin rash; treatment with the drug had to be discontinued in 3 of the 6 cases. These figures agree with the earlier reported incidence of skin reactions, which occurred in approximately 5% of patients receiving this drug.[4] At the end of the paper, but not included in their series, Bartels and Sjogren [3d] report that leukopenia occurred in one patient who was being treated with methimazole. Bartels [5] stated that, in a series that now contains over 250 cases, leukopenia developed in only one patient and that she had previously had agranulocytosis that resulted from propylthiouracil therapy. Recently Croke and Berry [6] reported a case of agranulocytosis that was believed to be due to treatment with methimazole. Recovery followed discontinuation of treatment with the drug.

In a careful examination of the literature, we failed to find record of a death from agranulocytosis due to methimazole therapy. The purpose of this report is to record such a case.

REPORT OF A CASE

A 67-year-old white woman was first seen in the Thyroid Clinic of the White Memorial Hospital on Oct. 2, 1951. She stated that since June, 1951, she had had spells of weakness and fatigue accompanied by increasing nervousness and rapid beating of her heart. Although her appetite had remained good, she had lost 10½ lb. (4.8 kg.) during the four month period. She had not been aware of having had a goiter until her attention was called to it by a physician. The patient's past history was noncontributory except for a radical mastectomy done in December, 1949, for adenocarcinoma.

Physical examination revealed a cooperative thin white woman with some evidence of weight loss. To the right of the trachea a substernal thyroid nodule, 5 by 3 by 3 cm., was easily palpable when the patient swallowed. The left side of the neck was without nodules. The left breast had been surgically removed. The blood pressure was 160 systolic and 95 diastolic; the pulse rate was 80 per minute, and the rhythm was regular. The rest of the physical examination contributed nothing of significance. A complete blood cell count showed hemoglobin of 13.7 gm. per 100 cc., 4,510,000 red cells, and 7,000 leukocytes, with 42% neutrophils, 46% lymphocytes, 6% monocytes, 5% eosinophils and 1% band cells. The results of urinalysis were normal. The Kolmer and Kline reactions were negative. The protein-bound iodine content was 9.9 μg per 100 cc. of serum, (normal 4 to 8 μg). Administration of a tracer dose of 102 μc of I^{131} showed an uptake of 24% in the thyroid in 24 hours.

A diagnosis of nodular goiter was made, and surgery was planned. Because of some evidence of thyrotoxicosis, on Oct. 8, 1951, treatment was begun with phenobarbital, 15 mg. three times daily, and methimazole, 10 mg. three times daily. The patient was warned that she should report to the clinic if a skin rash, sore throat, or fever developed.

On Oct. 22 she returned to the clinic and reported that she felt stronger and had gained 1 lb. (0.5 kg.). On Nov. 5 she reported further improvement and had a total weight gain of 2½ lb. (1.1 kg.). The next day the first serious signs developed. The patient had extreme weakness, generalized aching, a liquid bowel movement, and fever. After three days her family physician was called. Because of the high temperature and jaundice, he gave an injection of penicillin. The next day the physician found the patient dyspneic. Her temperature was higher and her jaundice more pronounced. On the fifth day of her acute illness she was admitted to the White Memorial Hospital. During her acute episode at home she continued to take methimazole three times daily.

Her temperature on admission was 105 F by rectum, pulse rate 116 per minute, respirations 34 per minute, and blood pressure 96/60. She was lethargic but conscious. Her skin and scleras were mildly icteric. The liver was palpable two fingerbreadths below the costal margin. Immediate laboratory studies found the white blood cell count to be 1,300 per cubic milli-

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2. Stanley, M. M., and Astwood, E. B.: 1-Methyl-2-Mercaptoimidazole: An Antithyroid Compound Highly Active in Man, Endocrinology **44**: 588 (June) 1949.

meter, with 87% lymphocytes and 13% monocytes. No neutrophils were found. The icterus index was 40 units. The urine contained bile but no urobilinogen.

Vigorous therapy to control the infection during the agranulocytosis was started immediately. Penicillin therapy and intravenous administration of terramycin, fluids, and whole blood were promptly begun. Ten milligrams of corticotropin (ACTH) was added to the fluids given intravenously. Oxygen was administered continuously by nasal catheter. In six hours the patient showed no improvement; however, she remained conscious and alert, though very dyspneic. Another 500 cc. of blood and corticotropin was given by vein. After 18 hours the patient had a cold, sweaty skin, her blood pressure was unobtainable, and she died.

Autopsy revealed a nodular thyroid gland that weighed approximately 40 gm. There was bilateral bronchopneumonia. In the first left intercostal space and in the posterior portion of the lower lobe of the left lung there were discrete 2-cm. nodules of metastatic carcinoma from the previous breast malignant lesion. The liver was 7 cm. below the costal margin and weighed 1,280 gm. Its capsule was slightly distended, and the biliary tree was free from obstruction. Results of the remainder of the gross examination, including examination of the brain, were not significant. Microscopic examination confirmed a bilateral bronchopneumonia and metastatic adenocarcinoma. The thyroid showed many dilated follicles with flat and cuboidal cells. One section showed a typical fetal adenoma. On other sections studied there were areas of fibrosis, but no hyperplasia or carcinoma was found. Sections of the liver revealed slight central lobular congestion with an increased number of round cells in the periportal areas. The bone marrow showed a definite decreased cellularity with a large number of megakaryocytes and a decreased number of cells of the myelocytic series. Many of these showed degenerative changes characterized by swelling of the cytoplasm with indistinct margins and pyknosis or irregular staining qualities of the nuclei. Sections also showed groups of tumor cells in the marrow.

COMMENT

From the information available it seems justifiable to conclude that the agranulocytosis in this patient was due to methimazole therapy. Jaundice, without demonstrable morphological changes in the liver, was also present. The cause for this patient's inability to handle biliary pigments could not be determined. Hepatic function may have been impaired by the drug, the severe infection, or both. It is our opinion that this patient's unfortunate outcome could have been avoided if she had promptly discontinued ingestion of methimazole when signs of toxicity appeared and reported her symptoms to the physicians responsible for her care.

In the use of propylthiouracil, it is the policy of our clinic to consider that the prompt reporting of a sore throat or fever is adequate warning of impending granulocytopenia. Several blood cell counts are taken during the course of treatment. It is noted that sore throat was not a symptom of the agranulocytosis in our case or in the case reported by Croke and Berry.[6] Both patients became severely ill in a few hours. It would seem that not only the bone marrow but also the entire body was overwhelmed by the toxicity.

Any physician who uses potentially dangerous drugs, such as those of the antithyroid group, must depend on the cooperation of the patient during their administration. Regular patient visits to the physician, frequent blood cell counts, and, at the onset of toxic symptoms, prompt discontinuation of the use of drug and immediate notification of the physician giving the drug are essential for avoidance of a fatal outcome.

SUMMARY

A case of fatal agranulocytosis associated with pneumonia and jaundice occurring during the administration of methimazole ("tapazole") is reported.

312 N. Boyle Ave.

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ACUTE URINARY RETENTION AS A COMPLICATION OF PREGNANCY

REPORT OF A CASE

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The urinary bladder functions normally during pregnancy; however, when a retroverted uterus is present during the pregnant state, the bladder may not empty properly. Severe uterine retroflexion can result in complete obstruction of the urinary channel. The obstruction is caused by the expanding uterus being securly wedged between the os pubis and the sacrum, with the urethra occluded at the point where pressure is exerted by the cervix.

In the available literature there are three reports of patients who suffered complete urinary retention in pregnancy due to uterine retroflexion: Smellie (1876)[1]; Crabtree (1942)[2]; and Burdon, Maurer, and Lich Jr. (1951).[3] All of these patients were in the fourth month of pregnancy; the patient reported on in this paper was in the third month. In all four cases the degree of retroflexion was complete, so as to prevent the rise of the uterus out of the true pelvis. Urinary retention usually occurs during the third or fourth month, because the uterus is too small before that time to impinge itself in the pelvic cavity and exert pressure. After that time the displaced uterus, if it is not adherent, usually undergoes spontaneous reduction. An eccentric hypertrophy occurs, in which the anterior wall undergoes more rapid distention than the posterior wall and, emerging above the superior strait, eventually draws up the rest of the

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1. Smellie, W.: Treatise on the Theory and Practice of Midwifery, edited by A. H. McClintock, London, The New Sydenham Society, 1876, vol. 1, p. 147.

2. Crabtree, E. G.: Urological Diseases of Pregnancy, Boston, Little, Brown & Company, 1942, p. 210.

3. Burdon, S.; Maurer, J. E., and Lich, R., Jr.: Acute Retention in Pregnancy, J. Urol. **65**: 578 (April) 1951.

organ. After the fundus has once passed the promontory of the sacrum, there is no fear of a recurrence of the condition.

Treatment consists of manual replacement of the pregnant uterus after the bladder has been decompressed. This is not always possible if the uterus is impacted. About four to seven days of treatment with retention catheter drainage and antibiotics, enabling the bladder to regain the contractility that has been lost from overdistention and associated infection, will sometimes suffice even if the uterus is not replaced, as in our case. This procedure can be repeated if the bladder again fills up, until such time as the uterus has lifted itself out of the pelvis, usually during the fifth month. Sedation is contraindicated, as it will depress the urinary urge and cause the bladder to overdistend; also, the patient should be encouraged to urinate about every two to three hours to prevent overfilling and resultant bladder atony.

REPORT OF CASE

A 29-year-old multipara was admitted to the private service of one of us (M. S.) at the Bronx Hospital on Aug. 25, 1950, with acute urinary retention of four days' duration. Her last menstrual period had been May 20, 1950. Eighteen days before admission, she began to have difficulty voiding in the morning. It took her about one hour to pass her urine. This occurred every morning until four days prior to admission when urinary retention developed, which lasted for 24 hours; then she had to be catheterized. This recurred on succeeding days, and hospitalization was advised. She had no associated urinary symptoms of hematuria, pyuria, or dysuria. Systemic review was negative.

The physical examination showed blood pressure to be 120/80 and pulse 112, and breasts showed the changes of pregnancy. The bladder was enlarged to the umbilicus and was tender. Pelvic examination was performed after a retention catheter was inserted, and 1,200 cc. of clear urine was removed. The cervix was anterior. The fundus showed enlargement compatible with a three to four month pregnancy, markedly retroverted, and fixed.

Laboratory studies revealed hemoglobin 92% (13 gm.), Sahli; red blood cell count, 4,730,000; white blood cell count, 6,500, with 63% polymorphonuclears, 36% lymphocytes, and 1% monocytes on a differential smear. The urea nitrogen was 10 mg. per 100 cc. The urine had a specific gravity of 1.022. There was a trace of albumin present but no sugar. Microscopically, four to seven white blood cells were present per high power field. The electrocardiogram was within normal limits.

On Aug. 26, 1950, cystoscopy was done by one of us (J. H.). A No. 21 French, Brown-Buerger convex cystoscope was passed into the bladder with marked difficulty, because of distortion of the urethra by pressure of the gravid retroverted uterus. The distorted urethra necessitated depression of the cystoscope and a shift to the right side in order to make it pass. The cystoscope was fixed in this position. Observation revealed that the floor of the bladder was pushed up. The mucosa was markedly congested and showed bullous edema of the neck and urethra. The ureteral orifices were both normal. Intravenous pyelography and cystography on Aug. 27 were within normal limits except for an elevation of the floor of the bladder due to the retroverted uterus.

Following the cystoscopy, the patient was placed on continuous catheter drainage and was given aquacillin® (aqueous penicillin suspension), 300,000 units twice a day, and terramycin, 250 mg. four times a day. After four days the catheter was removed. Attempts to replace the uterus were unavailing; however, the patient voided spontaneously without too great difficulty, and no residual urine was present in the bladder. She was discharged on Aug. 31, 1950, and advised to urinate every two to three hours day and night in order to prevent overfilling of the bladder. About a month after discharge from the hospital, she was able to void normally as she desired. She carried to term without further urinary difficulty.

SUMMARY

A case of acute urinary retention complicating pregnancy is discussed. The condition is rare and is caused by a retroverted uterus with the cervix pressing on the bladder neck and trigone. Only three previous cases are to be found in the literature. Treatment is discussed. Reasons for its occurring about the third or fourth month of pregnancy are explained.

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UNUSUAL REACTION TO INTRAPLEURAL ADMINISTRATION OF STREPTOKINASE AND STREPTODORNASE

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Streptococcic fibrinolysin (streptokinase) and streptococcic desoxyribonuclease (streptodornase) have been found to be beneficial in treating a variety of clinical states. Their mode of action and therapeutic usefulness have been described elsewhere.[1] These enzymes have been chiefly employed in the liquefaction of pleural exudates. Toxic systemic reactions caused by these substrates have been reported.[2] In at least 50% of the patients treated there is a febrile reaction, with associated malaise, headache, orthopnea, and, occasionally, nausea. This generally occurs approximately four to six hours after the administration of streptokinase and streptodornase, subsiding in the ensuing 24 to 48 hours. According to the protocol furnished by the manufacturers of the drugs, these side-effects are treated symptomatically and rarely are of a nature requiring cessation of treatment. It is the purpose of this report to show that the thermal reaction may be attained by serious consequences and that the patient should be treated by prompt removal of the liquefied exudate. The following case is, to our knowledge, the first reported instance of circulatory collapse associated with hyperpyrexia following use of streptokinase and streptodornase.

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2. Tillett and Sherry.[1b] Sherry, Johnson, and Tillett.[1c] Tillett, Sherry, and Read.[1f] Hubbard.[1g] Miller, Ginsberg, Lipin, and Lang.[1h]

REPORT OF A CASE

A 51-year-old white man was transferred to the Veterans Administration Hospital on Jan. 12, 1952, with a three week history of dyspnea, right-sided pleuritic pain, and lowgrade fever. The patient had been treated at another hospital with penicillin administered intramuscularly and terramycin administered orally. Several thoracenteses were performed.

On admission, the patient had a temperature of 100 F orally, a pulse rate of 100 per minute, respirations 20 per minute, and blood pressure 140/90 mm. Hg. There was no cyanosis. The trachea was displaced to the left. Flatness and absent breath sounds were elicited over the lower half of the right side of the chest, anteriorly and posteriorly. Expiratory wheezes were heard over the right side of the chest anteriorly. The remainder of the examination was noncontributory.

Laboratory Data.—On admission, the leukocyte count was 9,500, with a normal differential, and the red blood cell count per 100 cc. (Haden-Hauser method). Hematocrit was 44%. Urinalysis was normal. Blood serology (Kahn) was negative. Serum chloride expressed as sodium chloride was 584 mg. per 100 cc.; blood urea nitrogen was 11 mg. per 100 cc.; and carbon dioxide combining power was 56. Pleural fluid cultures were negative for acid-fast bacilli, fungi, and pathogenic organisms. No tumor cells were found in pleural fluids examined. The blood culture was negative, and a sputum culture revealed nonpathogenic bacilli. A roentgenogram of the chest revealed an extensive pleural effusion, almost completely filling the right hemithorax. The mediastinum and heart were displaced to the left. The left lung field was clear.

Hospital Course.—The patient's temperature varied from 99 to 100 F during the first three hospital days. Treatment included the intramuscular administration of aqueous penicillin, in a dosage of 300,000 units twice daily. On Jan. 15, approximately 1,000 cc. of a rapidly clotting serosanguinous fluid were aspirated from the right pleural cavity with considerable difficulty. Streptokinase, 100,000 units, with streptodornase, 25,000 units, were instilled intrapleurally.

About eight hours after the administration of these enzymes, the patient experienced a sharp, shaking chill followed by a temperature rise to 105 F rectally. He was dyspneic, slightly cyanotic, and complained of right-sided pleuritic pain. Supportive therapy included codeine sulfate, 1 grain (0.06 gm.), with acetylsalicylic acid, 10 grains (0.65 gm.), given every four hours for three doses, alcohol spongings, and oxygen inhalation by nasal catheter. Approximately six hours later, the temperature was 101.8 F rectally, the rate of the apical heart beat 128, the pulse weak and thready, and the respirations 40 per minute. A blood pressure reading was unobtainable. Auscultation of the chest revealed prolonged expiratory wheezes bilaterally. An electrocardiographic tracing at this point was interpreted as sinus tachycardia. The patient was immediately treated with intravenous fluid therapy, including two units of plasma, 1,000 cc. of 5% glucose in distilled water, and 1,000 cc. of whole blood given over the ensuing six hours.

It was deemed advisable to rid the pleural cavity of any toxic substances that might be present. A total of 2,300 cc. of serosanguinous fluid was aspirated from the right pleural cavity. Additional therapy included the intravenous administration of diphenhydramine (benadryl®) hydrochloride, 50 mg. every four hours for five doses, and *l*-arterenol (levophed®) given according to the protocol furnished by the manufacturer. Blood pressure reached normal levels approximately seven hours after the patient was first noted to be in shock. An additional liter of 5% glucose in distilled water was given slowly intravenously. Thereafter, the blood pressure and apical rate were stabilized, with marked clinical improvement. The patient was able to take fluids and nourishment orally. Another thoracentesis, yielding 1,500 cc. of serosanguinous pleural fluid, was performed the same day.

Blood studies were obtained during the period of shock and on subsequent days. Serum chloride was 375 mg. per 100 cc. (expressed as sodium chloride), increasing to 560 mg. per 100 cc. on the following day. Carbon dioxide combining power was 30 volumes per cent, rising to 66 volumes per 100 cc. the next day. Blood urea nitrogen was 30 mg. per 100 cc., falling to 16 mg. per 100 cc. in 24 hours. The hematocrit was 44%, erythrocyte count 4,100,000 per cubic millimeter, and hemoglobin 12 gm. per 100 cc. These values did not change materially on subsequent days. Total circulating eosinophils were 13 per cubic millimeter during the period of shock, 48 per cubic millimeter two days later, and 53 per cubic millimeter after six days. On Feb. 5, total circulating eosinophils were 184 per cubic millimeter, falling to 66 per cubic millimeter four hours after the injection of 25 mg. of adrenocorticotropic hormone intramuscularly. The febrile reaction lasted approximately 72 hours and the circulatory collapse at least 7 hours.

Further clinical studies, including two bronchoscopies with bronchial biopsy, revealed the presence of a bronchogenic carcinoma. Thoractomy performed on Feb. 7, revealed an extensive unresectable tumor involving the right middle and lower lobes and invading the pleura and chest wall. The patient left the hospital for home care on Feb. 25, 1952.

COMMENT

The problem of systemic toxicity to treatment with streptokinase and streptodornase has been investigated elsewhere.[3] Careful cytological studies on pleural fluids after the administration of these enzymes have been reported.[4] With the liquefaction of the exudate, there is an outpouring of serum and leukocytes into the pleural cavity. These enzymes have been found to be antigenic,[5] although allergic reactions are stated to be rare. The etiology of the thermal reaction has not yet been clearly determined; however, it is believed to be referable either to impurities in the manufactured substances or to breakdown products of enzymatic digestion rather than to the primary condition being treated.[1g]

We are reporting this case as an instance of anaphylactoid shock that occurred secondary to the administration of streptokinase-streptodornase. Products of protein digestion may act as capillary poisons under given conditions, as stated by Davis.[6] It may be argued that the rapid outpouring of serum from the circulatory system into the pleural cavity may have been responsible for the state of shock; however, the failure of the hematocrit or hemoglobin concentration to vary significantly makes this unlikely. In addition, there were no evidences of either hemorrhage or any of the other known causes of circulatory collapse. The patient had received both acetylsalicylic acid and codeine sulfate prior to and following this episode without any untoward effects. The electrolytic changes of shock have already been described in detail[7] and require no elaboration in this discussion. The marked eosinopenia can be considered to be the result of adrenocortical stimulation secondary to stress.[7c]

The intrapleural administration of streptokinase-streptodornase is therefore not without danger. A case with fatal outcome, following its intrathecal use, has been reported.[8] It is our recommendation that whenever a

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3. Tillett and Sherry.[3b] Hubbard.[3g]
4. Sherry, Johnson, and Tillett.[4c] Johnson.[4d] Tillett, Sherry and Read.[4e]
5. Christensen.[5a] Tillett and Sherry.[5b]
6. Davis, H. A.: Shock and Allied Forms of Failure of the Circulation, New York, Grune and Stratton, Inc., 1949, pp. 128-170.
7. (*a*) Davis.[6] (*b*) Moon, V. H.: Shock: Its Dynamics, Occurrence and Management, Philadelphia, Lea & Febiger, 1942, pp. 24-34, 158-162. (*c*) Selye, H.: The Physiology and Pathology of Exposure to Stress: A Treatise Based on the Concepts of the General-Adaptation-Syndrome and the Diseases of Adaptation, Montreal, Canada, Acta, Inc., 1950, pp. 95-103, 404-432.
8. Craddock, W. L., and Haddock-Suarez, J.: Terminal Hyperthermia Following Intrathecal Streptokinase Administration in a Case of Tuberculous Meningitis, Ann. Int. Med. **36**: 168-171, 1952.

febrile response follows the injection of these enzymes, the contents of the serous cavity being treated should be promptly evacuated. This would prevent any further absorption of toxic products. The patient should also be carefully observed for evidences of circulatory depression and vigorously treated if it occurs.

SUMMARY

A case of pleurisy with effusion treated with streptokinase-streptodornase has been discussed. It is felt that the use of the enzyme combination was the direct cause of the pyrogenic and anaphylactoid reaction.

HEMIPLEGIA DURING TETRAETHYLTHIURAM DISULFIDE (ANTABUSE®) THERAPY

Wingate M. Johnson, M.D., Winston-Salem, N. C.

Although tetraethylthiuram disulfide (antabuse®) has been used in many thousands of cases, I have been unable to find any report of a cerebral vascular accident occurring in connection with its use. In the case to be reported the development of hemiplegia after the fifth dose of this drug may have been coincidental, but I feel that it should be on record, in order that those using the drug may be aware of the possibility of such a complication.

REPORT OF A CASE

A 49-year-old spinster entered the North Carolina Baptist Hospital on Nov. 21, 1951, evidently intoxicated with alcohol and with a history of having been drinking heavily for four or five days. For many years she had been a periodic drinker and had been in many hospitals and "sanatoriums" and also in a few jails. Every psychiatrist who had seen her considered her a true psychopath. Her relatives were anxious that she be given tetraethylthiuram disulfide, since they considered it the last hope of ending her addiction to alcohol. After she had become sober and after much persuasion, she agreed to take the treatment.

The patient was a well-developed, well-nourished white woman who looked about her stated age. Her blood pressure was 160 systolic and 82 diastolic. The eyegrounds were normal, and the results of a general physical examination were negative. Results of urinalysis were negative; the specific gravity was 1.018. The blood cell count showed 16.7 gm. of hemoglobin and 5,000,000 red blood cells. The corrected sedimentation rate was 18 mm. in an hour. Kahn and Wassermann reactions of the blood were negative. The nonprotein nitrogen and the fasting blood sugar levels were, respectively, 30 and 100 mg. per 100 cc. A sulfobromophthalein sodium liver function test showed no dye retention at the end of 30 minutes. Roentgen examination of the chest showed the lungs to be normal and the heart and aorta of normal size and shape, without calcification.

On Nov. 24, the fourth day after admission, the patient was given 1 gm. of tetraethylthiuram disulfide at bedtime, and the dose was repeated for the next four nights. The only effect noted was some drowsiness each morning. On the morning of Nov. 28, after the fourth dose, she was given 10 cc. of whiskey as a trial dose. This produced moderate flushing of the face and conjunctivas, and the pulse rate increased from 80 to 92 beats per minute. The systolic blood pressure fell only 9 mm. in 10 minutes—from 159 to 150—and the diastolic remained unchanged. Twenty minutes after ingestion of the whiskey, when she heard the telephone ring, the patient became excited, thinking it might be an important call for her, and the blood pressure rose to its original level. The rest of the day was uneventful, and the fifth dose of the drug was given at bedtime.

At 5 o'clock the next morning the patient rang for the nurse and complained of a headache. This grew worse, until at 7:45 a. m. the medical resident ordered 64 mg. of codeine to be given hypodermically. The patient said that she did not care for breakfast; when the nurse next looked in the room, she was apparently asleep. When I saw her at about 11 a. m., it was evident that she had had a cerebral vascular accident. She could not be roused; her face was drawn to the left; and there was a flaccid paralysis of the right arm and leg, with positive Hoffman and Babinski signs on the right. Her blood pressure was 220 systolic and 120 diastolic. Both Dr. R. L. Masland, neurologist, and Dr. Eben Alexander, neurosurgeon, concurred in the diagnosis of right hemiplegia, probably from a cerebral thrombosis. Lumbar puncture obtained a clear fluid, with a pressure of 210 mm. of water. Two hundred thirty-five crenated red blood cells were counted. The Pandy, colloidal mastic, and Kahn reactions were all negative; the spinal fluid protein was 58 mg. per 100 cc.

Dr. Alexander performed a left stellate ganglion block, injecting 30 cc. of 1% procaine hydrochloride. Papaverine hydrochloride, 32 mg. every two hours, was prescribed, and two intramuscular injections of a 50% solution of magnesium sulfate, 10 cc. with 1 cc. of 1% procaine, were given at 4 and 6 p. m.

The patient showed rapid improvement. Her blood pressure dropped steadily within 12 hours to 158 systolic and 90 diastolic but rose the next day to 190 systolic and 100 diastolic. After a third injection of magnesium sulfate, the pressure again came down gradually, to 155 systolic and 90 diastolic. She was able to talk fairly well and was beginning to move the right arm and leg. After the fourth day the blood pressure ranged between 110 and 140 systolic and 70 and 90 diastolic, except for a few transient elevations to 155 to 160 systolic and 90 to 100 diastolic. These could be ascribed to excitement.

The dosage of papaverine was reduced to 32 mg. every four hours on Dec. 2, and its use was discontinued on Dec. 4. Improvement in every respect continued, and by the fifth day the patient was able to get out of bed and walk with assistance. She was discharged on Dec. 11, 12 days after the occurrence of the cerebral vascular accident. When seen on Dec. 20, she was able to walk without difficulty and could use her right arm fairly well but was still unable to write with it. Her face was still slightly drawn to the left.

COMMENT

As far as I can learn, this is the first case in which cerebral thrombosis has occurred in the course of treatment with tetraethylthiuram disulfide. Jacobsen,[1] in reviewing 200 cases in which this drug was used, stated that three patients died "from cerebral hemorrhage, accident (while sober) and suicide." Apparently, however, the deaths all occurred after the initial course of treatment and were not to be ascribed to the use of the drug. This inference is justified by Jacobsen's comment that "Antabuse in itself is relatively innocuous, though side-effects, such as drowsiness, tiredness and indigestion may occur. In general, such side-effects are without practical importance, and can be kept under control by adjusting the dosage."

In discussing Dr. Jacobsen's paper, however, Partridge points out that a fall in blood pressure may occur during treatment with tetraethylthiuram disulfide and suggests that this may result in an increased liability to coronary thrombosis.[2] Although he did not mention cerebral thrombosis as a possible complication, the cerebral vessels are as vulnerable to thrombosis as are the coronaries. The present case is reported in the hope that, if

From the Department of Internal Medicine of the Bowman Gray School of Medicine of Wake Forest College.

1. Jacobsen, E.: Biochemical Methods in the Treatment of Alcoholism, with Special Reference to Antabuse, Proc. Roy. Soc. Med. **43**: 519-526 (July) 1950.

2. Partridge, in discussion on Jacobsen,[1] Brit. J. Addiction **47**: 18-25, 1950.

others have had similar experiences in even a single case, they will be stimulated to report them.

It is possible that this cerebral accident was merely coincidental with the use of the drug and not attributable to it. The same emotional stress that probably precipitated the patient's drinking bout just before her admission to the hospital may have produced a dangerous rise in blood pressure. She herself is convinced, however, that treatment with the drug was responsible. Needless to say, a resumption of tetraethylthiuram disulfide therapy in this case is not contemplated.

300 S. Hawthorne Rd.

POISONING FROM TETRAETHYLPYROPHOSPHATE (TEPP)

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William G. Moran, M.D., Portsmouth, N. H.
Milton Feldstein, M.S., Buffalo
and
Harry E. Fidler, M.D., Derry, N. H.

The use of organic phosphates as insecticides is becoming widespread in agriculture. These substances have a high degree of toxicity, necessitating adequate precautions in their routine employment. Such precautions have been emphasized by the manufacturers as well as by various medical organizations and publications. The toxic properties of the organic phosphates are derived from their ability to inhibit cholinesterase. They produce peripheral symptoms equivalent to the stimulation of postganglionic fibers of the parasympathetics, thus simulating the effect of muscarine. This action is counteracted by atropine, which is used as an antidote. The organic phosphates also exhibit effects similar to those of nicotine being able to stimulate fibers to skeletal muscle. This effect is not influenced by atropine. The autonomic ganglions are stimulated in the early stages of poisoning but are blocked in more extensive poisoning. Metcalf [1] and Lehman [2] have described in more detail the mode of action of these substances. In the case reported here death occurred in a very short span of time following the ingestion of tetraethylpyrophosphate (TEPP). A similar poisoning, but one which did not terminate fatally, has been reported by Faust.[3]

REPORT OF CASE

The patient was a 16-year-old male student who worked on a farm in his spare time. On the day of his death he was assigned to help a spraying crew in preparing the last spray operation of the day at 4 p. m. The exact time was well known. The victim aided in this operation by measuring tetraethylpyrophosphate from the original trade container into a pint jar. While performing this task one of his co-workers noticed that he had lifted the jar up to his face. The man warned him against the danger and was told by the boy that no material had been swallowed; however, the boy began to walk erratically in circles almost immediately, making violent attempts to expectorate. Shortly afterward he became comatose. A physician arrived immediately and injected 1/75 grain (0.8 mg.) of atropine intravenously. He noticed, while doing so, that the blood was almost black and the cells appeared to be agglutinated. Immediately after injection the attending physician was unable to elicit a heartbeat. He determined that death had occurred at the time of or just prior to the injection of atropine. This time was 4:07 p. m. It was observed that the body of the dead boy was wet with perspiration and that the skin color was a dark purplish-blue. The pupils were pinpoint size, equal, and regular. The boy had excreted approximately five tablespoonfuls of saliva at the spot where he was lying.

Postmortem examination was performed 24 hours later. The skin was discolored with irregular red to purplish patches, most intense in dependent locations. The peritoneal cavity contained a small amount of slightly blood-tinged serous fluid, and the stomach was moderately distended with fluid. Upon removal of the ligated stomach, the esophagus was found to have an irregular patchy discoloration, but the duodenum did not appear unusual. The liver showed moderate vascular congestion only. The spleen was approximately twice its normal size. It was relatively firm in consistency and of purple color. The kidneys showed intense vascular congestion. The plural cavities contained a barely perceptible amount of slightly blood-tinged serous fluid. The lungs showed intense vascular congestion, with the cut surfaces oozing dark red to purple blood. The mucous membranes of the bronchi were congested. The heart showed some degree of dilation of the right auricle and ventricle and was filled with dark blood. Throughout the entire dissection the blood was found to have remained liquid and dark red in color. Histological examination of the various organs did not reveal anything specific other than the intense vascular congestion described.

The stomach content was examined for its anticholinesterase activity. The test was made by determining the inhibitory effect on human red blood cell cholinesterase activity by dilutions of the stomach content. It was found that approximately 100% inhibition took place in dilutions of the stomach content up to 1 to 100. In dilutions of 1 to 1,000 the inhibition was approximately 50%, and in dilutions of 1 to 10,000 the inhibitory effect was approximately 25%. Several routine gastric specimens were used as controls. None of these showed any anticholinesterase activity. It is believed that the magnitude of the inhibitory effect of the gastric contents strongly indicates that the boy swallowed some of the tetraethylpyrophosphate, in spite of his statement to the contrary.

SUMMARY

A case of poisoning is described in which the symptoms conformed to the effects of a substance with anticholinesterase activity. Tests on the stomach content proved the presence of a strong cholinesterase inhibitor indicating that death had occurred as a result of the accidental ingestion of tetraethylpyrophosphate. The poison proved fatal in less than five minutes.

100 High St. (Dr. Klendshoj).

From the Division of Toxicology, University of Buffalo, School of Medicine, the Laboratories of the Buffalo General Hospital, and the Portsmouth Hospital.

1. Metcalf, R. L.: The Mode of Action of Organic Insecticides, Review no. 1, National Research Council, Chemical-Biological Coordination Center, 1948, p. 71.

2. Lehman, A. J.: The Toxicology of the Newer Agricultural Chemicals, Bulletin of the Association of Food and Drug Officials, vol. 12, no. 3 (July) 1948.

3. Faust, J.: Poisoning Due to Tetraethylpyrophosphate, J. A. M. A. **141**: 192 (Sept. 17) 1949.

Radioiodine in Hyperthyroidism.—The radioactive iodine therapy of hyperthyroidism is controllable, predictable, and successful. Its principal disadvantage is the possible hazard of late carcinogenesis. What this hazard is, is not known. The facts essential for critical decision are not as yet available. The therapy is, therefore, to be reserved for patients in whom late carcinogenesis will not become a question or in whom the disadvantages of another therapy outweigh the possibility of late carcinogenesis. . . .

A criterion for therapy in all patients is that they be available for long-term follow-up and that they be able to co-operate in the follow-up program without anxiety being aroused. It is the responsibility of the clinic to follow all patients through the twenty-five-year period until the problem of the late hazard of the irradiation has been eliminated or determined.—Oliver Cope, M.D., Diseases of the Thyroid Gland, *New England Journal of Medicine*, March 13, 1952.

SPONTANEOUS CHYLOPNEUMOTHORAX

REPORT OF A CASE

Daniel G. Calenda, M.D.
and
Jeffrey H. Harris, M.D., Providence, R. I.

We have recently had the opportunity to follow a case of chylopneumothorax. A review of the literature reveals chylothorax due to any cause to be a rare condition, but we have been unable to find any case of chylopneumothorax in the American or British journals.

REPORT OF A CASE

J. P., a 64-year-old white male odd-job worker, was referred to the Rhode Island Hospital because of chest pain and dyspnea. The patient said he had been in good general health for the previous five years but had had a mild cough productive of about two teaspoonsful of clear phlegm per day that had been present for several years. It had not changed in the past year, and there was no hemoptysis. He stated he had not been exposed to tuberculosis. Three days prior to admission there was a sudden onset of moderately severe substernal and epigastric pain while he was lifting a coal scuttle. He was seen by his family physician. The pain disappeared, and the dyspnea decreased temporarily. The chest pain returned two days later but was milder. It was severer on the right side and was slightly severer on deep inspiration. The dyspnea returned, became progressive, and was associated with some orthopnea. A chest x-ray showed hydropneumothorax.

The patient had no respiratory distress except when lying flat. The temperature was 99.8 F, pulse rate 88, and blood pressure 130/82. The neck was supple without tracheal deviation or cervical venous distention. The chest was increased in anteroposterior diameter. There was decreased excursion of the right hemithorax with slight retraction on inspiration. There was dulness and decreased to absent breath sounds in the lower two-thirds of the right side of the thorax. The apical impulse of the heart was not felt, but the left border of cardiac dulness was found almost at the anterior axillary line. The rhythm was regular and the sounds of good quality; no murmurs were heard. There was no clubbing of the fingers and toes. The results of the remainder of the physical examination were not remarkable.

Laboratory examination revealed 8 to 10 white blood cells in the urine. The hemoglobin was 14.1 gm. per 100 cc.; the red blood cell count was 4,530,000 and the white blood cell count 10,800, with a normal differential count. Blood urea nitrogen was 17 mg., serum protein 8.2 mg., and serum albumin 6.2 mg. per 100 cc. A chest x-ray revealed a moderate right hydropneumothorax with practically complete collapse of the lower and middle lobes. The upper lobe was only partially collapsed, owing to adhesions. The heart and mediastinal contents were displaced slightly to the left. The left lung was clear. Five hundred cubic centimeters of yellow-white fluid was removed by thoracentesis. The specific gravity was 1.020; a smear showed rare red blood cells and white blood cells. The fluid cleared after the addition of ether, and there were small globules found after the fluid was stained with Sudan III. The protein content was 6 gm. per 100 cc.; the fat content was 170 mg. per 100 cc. A cell block was negative for tumor cells. Culture of the fluid was sterile. Results of gastrointestinal examination were normal.

The hospital course was not remarkable. After the initial thoracentesis the dyspnea was markedly relieved. Several more thoracenteses were done in an attempt to remove the remaining fluid and air and thereby reexpand the collapsed lung, but without success. Serial x-rays showed no reaccumulation of fluid. At discharge there was evidence of definite but minimal reabsorption of the remaining fluid; however, no reexpansion of the lung could be demonstrated. Discharge was effected on the 17th hospital day. A follow-up report from the family physician stated that the fluid was not all reabsorbed until 10 weeks after the patient's discharge and at that time the lung had not reexpanded. The patient was feeling well and appeared in good general health.

From the Department of Medicine, Rhode Island Hospital.

COMMENT

Yater cited the commonest causes of nontraumatic chylothorax to be (1) compression, invasion, or occlusion of the thoracic duct by metastatic carcinomas and (2) tuberculosis. There remains a third group of unexplained and miscellaneous causes, such as erosion of the duct by an aortic aneurysm, atherosclerosis of the duct with occlusion of the duct by a blood thrombus, lymphangectasis of the duct, and thrombosis of the great veins of the neck.

Considering this patient's course, we are of the opinion that this case represents one of spontaneous chylopneumothorax of unknown cause. It is conjectured that, during the process of lifting, the intrathoracic pressure was elevated and caused a spontaneous pneumothorax. When this occurred, it is conceivable that a collateral of the thoracic duct, of which there are many, was ruptured. A collateral is postulated because of (1) the presence of a relatively small effusion and (2) the failure to recur and subsequent reabsorption.

SUMMARY

A case of apparently spontaneous chylopneumothorax is reported.

SPONTANEOUS PERFORATION OF COLON IN ABSENCE OF PATHOLOGICAL CONDITION

Mandel Weinstein, M.D.
and
Morton Roberts, M.D., Jackson Heights, N. Y.

Spontaneous perforation of the colon in the absence of a contributing factor, such as disease of the bowel, or hernia, is an occurrence of extreme rarity. Wilensky and Kaufman [1] recorded a case of sudden perforation of the intestine following the lifting of a 150 lb. stone. The presence of an inguinal hernia in their patient was assumed to be the contributing cause. This unusual case afforded them an opportunity to thoroughly review the literature and to include almost every similar case reported up to 1937, a total of 42 cases. In every case uncovered, the perforation was associated with: diverticulitis, prolapse of the rectum, intestinal adhesions, carcinoma and tuberculosis of the bowel, typhoid, hernia, or some other pathological condition. Inguinal hernia was the most frequent accompaniment of spontaneous intestinal perforation. In 1942, Berman and Rosner [2] reviewed the more recent literature and reported another case of rupture of the intestine following severe abdominal strain.

1. Wilensky, A. O., and Kaufman, P. A.: Subparietal Rupture of the Intestine Due to Muscular Effort: Complication of Hernia, Ann. Surg. **106**: 373 (Sept.) 1937.

2. Berman, H., and Rosner, H.: Rupture of the Intestine Following Severe Abdominal Muscular Strain, Am. J. Surg. **58**: 137 (Oct.) 1942.

thus bringing the study more up-to-date. Their own case as well as the more recent ones they reported occurred in association with inguinal hernia.

REPORT OF A CASE

J. L., a 63-year-old white man, a baker, was admitted to Boulevard Hospital two hours after having experienced a sudden sharp pain in the abdomen while having a bowel movement. His only previous illness of any significance was mild prostatic hypertrophy accompanied by difficulty in voiding, for which he had undergone a five month course of treatment. In the present instance, the bowel movement had required more than usual straining. The pain throughout the entire abdomen was severe but was not associated with nausea or vomiting. During careful questioning, the patient denied a history of trauma, recent enemas, or the introduction of a foreign body into the rectum.

Examination at the hospital revealed a thin elderly man in a state of partial shock. His temperature was 99 F, pulse rate 90, and respiratory rate 20. A preoperative urinalysis showed only a trace of albumin. Laboratory examination of his blood revealed hemoglobin 16.4 gm. per 100 cc., erythrocytes 5,800,000, leukocytes 9,300 (84% polymorphonuclears with 3 immature forms, 1% eosinophils, 14% lymphocytes, and 1% monocytes). The abdomen was rigid and tense, with tenderness equally distributed throughout. The rectum was normal on examination. A diagnosis of acute diffuse peritonitis was made, and it was decided to operate immediately. At operation the peritoneum was found to be the seat of an intense inflammatory reaction, being reddened, swollen, and edematous, with a large amount of liquid and formed stool spread throughout. The pelvis, particularly, showed segments of dry formed stool. An exploration revealed an intact right colon and appendix. The transverse colon showed the least amount of inflammatory reaction, because of its protective omental covering. There was a perforation about 1 in. (2.54 cm.) in diameter on the antimesenteric surface of the sigmoid flexure, with pouting, everted edges, giving the distinct appearance of a site of exit. The surrounding bowel wall tissue was of normal softness, with no indurated edges. There was no evidence of diverticula. A careful examination of the remaining left colon revealed a normal large bowel wall; however, the colon was greatly distended because of a large amount of hard stool packed in it. The sigmoid colon in particular was overdistended with solid feces. No hemorrhage, ecchymosis, bowel wall edema, growth, or foreign body was seen in any part of the intestines.

The perforation was closed with two layers of fine black silk sutures in the transverse diameter of the sigmoid to avoid narrowing. Because of the immense distention of the left colon by feces, a size 32 French mushroom catheter was placed in the cecum through a stab wound in the right lower quadrant; thus, by effecting decompression of the colon, the suture line of the sigmoid was protected. An effort was made to remove as much of the fecal material as possible, and Penrose drains were inserted down to the pelvis. The abdominal wall was closed with interrupted figure-of-eight wire sutures. Clips were used to close the skin. The patient's condition was good when he was returned to his bed.

Postoperatively, penicillin was administered every 6 hours in doses of 500,000 units, and aureomycin was administered intravenously. The postoperative course was not remarkable, and the patient's temperature for the first five days remained below 101 F. The cecostomy tube was irrigated from time to time and functioned well. On the sixth day, the patient had three involuntary nonformed stools, and from that time he had good bowel patency. His temperature rose to 102 F on the fifth postoperative day, and this was believed to be the result of pneumonitis and a collection of fluid in the right pleural cavity; roentgenograms confirmed this diagnosis. The cecostomy tube dropped out on the 11th day, and the cecostomy wound was almost completely closed when the patient was discharged from the hospital on Aug. 2, 1951, or 26 days after the operation. A follow-up barium roentgen examination of the colon revealed neither diverticula nor a pathological condition in the large intestine.

Up to the present time, only one other case of spontaneous colon perforation similar to this one has been reported in the literature. In January, 1944, Brown [3] reported the case of a 30-year-old male patient who, a few minutes after arising in the morning, experienced a pain in the hypogastrium that was so severe he rolled on the floor in agony. He had had no relevant symptoms in the past. Physical examination revealed a cold, clammy, cyanotic patient, with generalized board-like rigidity of the abdomen and diffuse tenderness. Laparotomy disclosed a small quantity of feces in the pelvis issuing from a laceration 1 cm. in length on the antimesenteric border of the pelvic colon. The surrounding intestinal wall was normal, and no diverticula were present; this was confirmed by a barium enema. Convalescence was stormy, but the patient recovered in six weeks. This case is unusual in that no cause for the perforation was mentioned, not even straining at stool, and no mention was made of the presence or absence of hernia. The author stated that, in a search of the literature, he had failed to find a similar case.

SUMMARY

A case of spontaneous perforation of the colon, which was caused by straining at stool, in a severely constipated patient is reported. No underlying cause, such as trauma, diverticula, or hernia, was discovered. Such a condition was present in every case reported in the literature. Only one other similar case has been reported.

75-17 Forty-First Ave.

3. Brown, J.: Spontaneous Perforation of the Pelvic Colon, Brit. J. Surg. **31**: 307 (Jan.) 1944.

FLOW REGULATOR FOR INTRAVENOUSLY ADMINISTERED FLUIDS

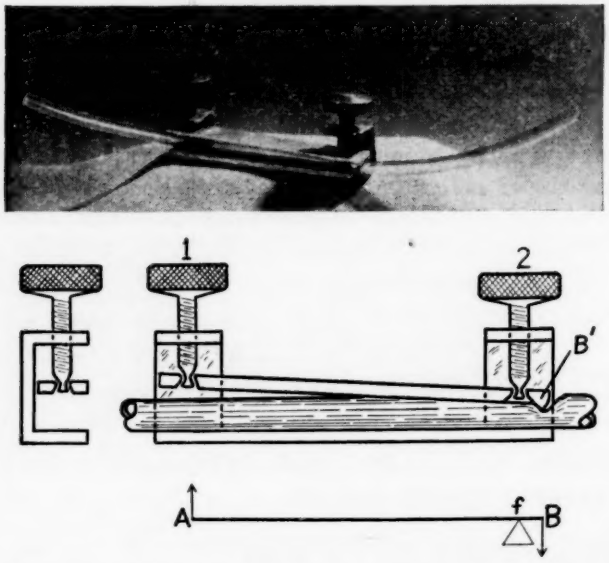
David Feldman, M.D., St. Louis

The rapidity of infusion of parenterally administered fluids is controlled by means of an adjustable clamp attached to the compressible tubing through which the solution flows, and the flow rate is usually gaged by observation of the rate at which drops of the solution pass through a drip apparatus. With the conventional types of clamps in general use, rates of flow of more than about 40 or 50 drops per minute are readily attainable with the required degree of accuracy. However, at slower flow rates, a slight adjustment of the tubing clamp may make so great a difference in the rate at which solution passes through the drip apparatus that accurate regulation may be a tedious procedure. The slower the flow rate, the more difficult the regulation. Since rates of 30 drops per minute or less are sometimes necessary, for example in the intravenous administration of corticotropin, histamine, or arterenol, it seemed desirable to devise a means of adjusting slow flow rates more easily and efficiently than was possible with conventional tubing clamps. For this purpose a special clamp was designed with a coarse

From the Department of Internal Medicine, Jewish Hospital of St. Louis.

and fine adjustment somewhat analogous to the coarse and fine adjustments of a microscope.

The clamp, as may be seen in the accompanying figure, is a modification of an ordinary C-clamp. It consists of a movable bar that can be approximated to a stationary bar by means of two adjustable knurled thumb screws. The latter screws are attached close to either end of the movable bar by loose rivet joints. The operation of the clamp is as follows: The tubing of the fluid set is placed lengthwise between the movable and stationary bars, and, with the thumb screw labeled 1 tightened to a position about halfway to the stationary bar, thumb screw 2 is tightened. The tubing is thus compressed between the small downward projection (B′) of the movable bar and the stationary bar. The tightening of screw 2 is continued until a rate of flow (measured in drops per minute) is reached that is somewhat more rapid than that desired. The exact point at which tightening of screw 2 is stopped is of no importance. All further adjustments are made



Front and side views of the clamp. See text for explanation of the mode of operation of the clamp and for the meaning of the lever diagram.

with screw 1, which is now loosened (i. e., the movable and stationary bars are moved apart). When screw 1 is adjusted, the movable bar acts as a lever, moving about the point of attachment of screw 2 as a fulcrum, so that as screw 1 is loosened, increased compression of the tubing occurs between the downward projection of the movable bar and the stationary bar. As is indicated in the lever diagram in the accompanying figure, movement at the point of compression of the tubing is reduced in comparison with movement at the point of attachment of screw 1 by the sizeable ratio of fB:Af. As screw 1 is loosened, the very gradual increase in compression of the tubing permits easy adjustment of slow flow rates.

SUMMARY

A description is given of a tubing clamp designed for easy regulation of slow infusion rates of parenterally administered fluids. This is accomplished by a simple lever arrangement permitting very gradual compression of the tubing through which the fluid flows.

539 N. Grand (3).

MOLDED LUCITE® SURGICAL INSTRUMENTS

Frank T. Padberg, M.D., Chicago

At the suggestion of Dr. Loyal Davis, I have designed several instruments made of molded methyl methacrylate resin (lucite®) for use in neurosurgical operations. These include brain retractors, S-retractors, spoons, and a small mallet (fig. 1, 2, and 3). Lucite® is available in

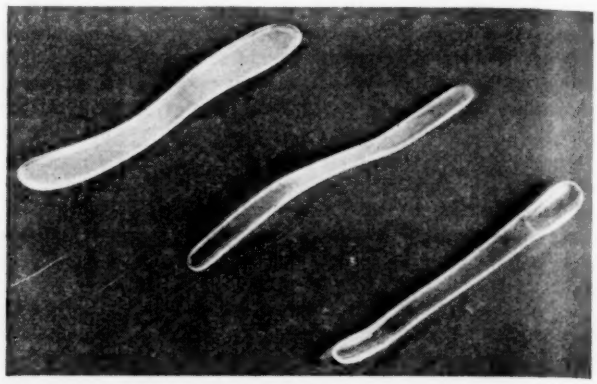


Fig. 1.—Large (left) and small (middle) lucite® S-retractors and a large lucite® spoon.

transparent sheets in a variety of thicknesses, 0.06 to 0.25 in. (0.15 to 0.64 cm.). I have found the 0.125 in. (0.32 cm.) thickness to be the most desirable for making the retractors and spoons. Lucite® is also obtainable in cylinders, which were used in making the mallet.

The patterns for the retractors and spoons were initially cut from the sheets of lucite® with a band or jig saw, much as such patterns would be cut from plywood. Since lucite® becomes soft and is easily molded when heated, these patterns were heated and then molded into the desired shapes. The brain retractors were molded over a

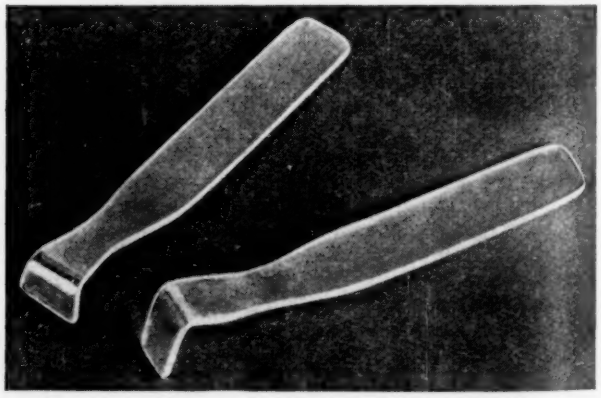


Fig. 2.—Lucite® brain retractors.

heated, square metal surface and the spoons and S-retractors over heated, curved metal surfaces. Immediately after molding, the instruments were placed in water at room temperature for hardening. In this procedure, care must be taken to avoid overheating the lucite® over an open flame, because it will ignite. The mallet was cut from pieces of cylindrical resin and worked with a lathe. The cut edge of lucite,® which is rough and sharp, was

Fellow in Neurological Surgery, Department of Surgery, Northwestern University Medical School.

rounded and smoothed, first with an ordinary metal file, then with a disc sander, and finally with fine sandpaper. The edges were polished with a flannel polishing wheel.

These plastic instruments are superior in many ways to their metal counterparts. They are inexpensive and easy to make. The plastic retractor has a smooth surface with rounded edges, which protects the brain when it is retracted; furthermore, the lucite® is transparent, and the underlying cortex and white matter can be seen. Light is poorly reflected from the surface of this material, and it does not conduct the electrocoagulating current. These retractors are light in weight, easily handled, and yet sufficiently strong to gently retract the brain. The brain retractors were made in pairs of different sizes, having depths of 0.25 in. (0.64 cm.), 0.50 in. (1.27 cm.), 0.75 in. (1.91 cm.), 2.5 in. (6.35 cm.), and 3 in. (7.62 cm.). The plastic mallet is light in weight, and the intensity of the blow is much more easily controlled than it is with other types, such as when the mallet is used in removing the bony prominence that sometimes obscures the foramen ovale and the mandibular division of the fifth nerve during a trigeminal sensory root section. The plastic spoon is particularly useful for palpating the cortex, and

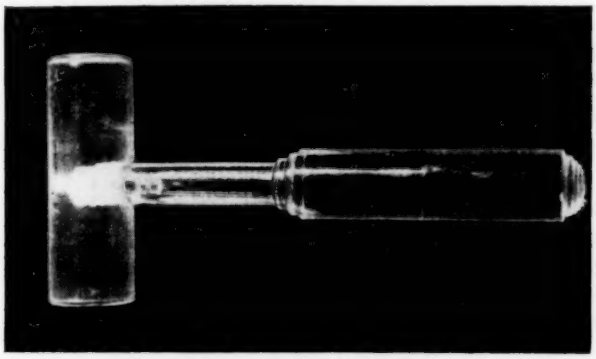


Fig. 3.—Small lucite® mallet.

the color of the underlying cortex can be distinctly seen. Large and small S-retractors and spoons were made. These lucite® instruments are sterilized by immersion in a 1:100 solution of benzalkonium (zephiran®) chloride for 20 minutes. The instruments are durable; one set has been in continuous use for over four years.

303 E. Chicago Ave.

Diagnosis of Gastric Cancer.—One must not be satisfied with a report from the radiologist of "no evidence of gastric cancer or obstruction." Remember that obstruction and shadow evidence of gastric cancer occur *late*. The x-ray fails to reveal a small lesion unless it is significantly ulcerated, fungated or happens to appear on the silhouette margin of the picture. The suspicious signs which you must ask your radiologist to report are those of thickening or hypertrophy of the rugae or decreased or asymmetric peristaltic activity of the different portions of the stomach. We have seen a patient whose only complaint was slight indigestion and whose repeated gastrointestinal x-ray examinations were negative except for "slight delay in gastric peristalsis and moderate hypertrophy of the rugae" for a period of six months at which time the symptoms were definite. Diagnosis of carcinoma of the stomach was readily made by x-ray and the patient was found inoperable. Exploration at the time of the first report of slight changes in the function and structure of the stomach might have resulted in successful radical removal.—George Z. William, M.D., Early Diagnosis of Gastric Carcinoma, *Virginia Medical Monthly*, May, 1952.

COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION

APPARATUS ACCEPTED

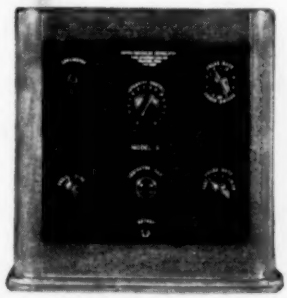
The following additional products have been accepted as conforming to the rules of the Council on Physical Medicine and Rehabilitation of the American Medical Association for inclusion in Apparatus Accepted. A copy of the rules on which the Council bases its action will be sent on application.

RALPH E. DE FOREST, M.D., *Secretary.*

Batrow Neuromuscular Stimulator, Model B

Batrow Laboratories, Inc., R. F. D. 1, Branford, Conn.

The Batrow Neuromuscular Stimulator, Model B, is essentially a generator of condenser discharges which follow each other with a frequency that varies from approximately one pulse per 1.5 seconds to about 45 pulses per second depending on pulse rate dial settings. The frequency can be reduced so that individual muscular twitches are elicited, or it can be increased until the twitches fuse into a sustained, smooth tetanic contraction. The distinctive feature of the apparatus is the glass, gas-filled electrodes in which a visible glow accompanies the discharge.



Batrow Neuromuscular Stimulator, Model B

Model B, unpacked, measures 41 (height) by 36 by 38 cm. (16 by 14 by 15 in.) and weighs 13 kg. (28 lb.). Packed for shipment it measures 41 by 41 by 46 cm. (16 by 16 by 18 in.) and weighs 16 kg. (35 lb.). The shipping weights include a movable applicator, a set of "fasten-on return" (dispersive) electrodes, a "footplate return" (dispersive) electrode, and a set of return leads. Further accessories not included in the shipping weights are a stationary applicator with connector cable and a motor point applicator. For operation the device requires a 60-cycle alternating current at 110 to 120 volts, and it draws about 75 watts. In general appearance the present Model B does not differ essentially from the Model A.

The evidence obtained in connection with this device indicates, in the opinion of the Council, that the device has merit in electrotherapy as a neuromuscular stimulator, but only for muscles possessing a normal nerve supply. There was no convincing evidence indicating that the device was useful for diagnostic purposes or for the stimulation of paralyzed muscles.

The Council voted to include the Batrow Neuromuscular Stimulator, Model B, in its list of accepted devices as a device for stimulating muscles with a normal nerve supply.

Micronic Hearing Aid, Model "Mercury"

Audivox, Inc., Successor to Western Electric Hearing Aid Division, 123 Worcester St., Boston 18.

The Micronic Hearing Aid, Model "Mercury," is an electric hearing aid for air and bone conduction. Conventional in shape, size, and general design, it is housed in a metal case that measures (excluding controls, hinge, catch, and decoration of microphone grille) 81 by 45 by 18 mm. With batteries, receiver, and cord it weighs 104 gm.

Evidence from an acceptable laboratory showed that this instrument met the published requirements of the Council for hearing aids. The Council on Physical Medicine and Rehabilitation voted to include the Micronic Hearing Aid, Model "Mercury," in its list of accepted devices.

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FELLOWSHIP ABOLISHED

At the recent meeting in Chicago, the House of Delegates voted to have only one class of membership; hence Fellowship in the Scientific Assembly has been eliminated. The symbol after the names of Fellows appearing in the Directory and elsewhere will now appear after the names of active members in the American Medical Association.

ESTABLISHING THE TIME OF UNWITNESSED DEATH

Although the fact of death is undeniable and inalterable, establishing the time of death of persons found dead is another matter; it is not always so easily determined as would seem to be implied by a wide reading of today's fast-paced "whodunits." According to Moritz,[1] establishing the time of unwitnessed death is important for two reasons. In one instance, evidence against a suspect is strengthened greatly if death can be proved to have taken place at a specified time, whereas innocence is implicit if it has occurred at another time, while in civil matters establishing the time of death is often a decisive factor in settlement of an insurance claim or in determination of inheritance.

Death cannot be considered certain unless the heart has stopped beating for at least five minutes. Cessation of breathing alone does not provide conclusive evidence of death, since the heart may continue to beat thereafter for many minutes. Even though listening to the heart with a stethoscope is usually reliable, this procedure can occasionally result in an incorrect opinion. The only completely dependable way to determine whether the heart has stopped beating is to obtain evidence supplied by an electrocardiograph.

Two general methods exist for determining the length of time that has elapsed since death. The first, referred to as the rate method, depends on recognition of the extent of certain postmortem changes; the second, known as the association method, depends on sequential relationships between the time of death and events happening at a known time.

Immediately after death a series of physical and chemical changes take place, and these continue in more or less orderly sequence until the remains disintegrate. They consist of cooling of the body; gravitation of blood to the skin of the dependent parts; initial relaxation of muscles followed by a brief period of stiffening and then a return to flaccidity; a series of measurable chemical changes in the blood and tissues; and, finally, the development of putrefaction and autolysis.

Following death, the rate of cooling of the body is modified by such factors as body temperature at the time of death, surface area in relation to weight and clothing, and the temperature and conductivity of materials and air with which the body is in contact. Hence the body of a slender person cools with greater rapidity than does the body of an obese person, and the residual temperature of the body of one who had fever at the time of death is higher than that of a person whose temperature was subnormal. A rough formula for establishing the time of death, which is derived from knowledge of the internal temperature of the body at a given time, reads as follows:

$$\frac{98.6\ \text{F} - \text{Rectal Temperature}}{1.5} = \text{Number of hours that have elapsed since death.}$$

Gravitation of blood to the skin of the dependent parts of the body provides a light hue initially and then a dark blue hue, reaching a maximum intensity 8 to 12 hours after death. Postmortem lividity develops with greater rapidity and is more intense in persons dying of heart disease than is the case of those who succumb suddenly as a result of violence. Muscular rigidity occurring in previously normal adults who lived in an average environmental temperature is usually perceptible within two to four hours after death; muscular flaccidity reappears within 24 to 36 hours. Chemical changes evolve in a more or less orderly fashion. Sugar in the blood, for example, is destroyed gradually and during the first six hours falls at the rate of 6 to 10 mg. per 100 cc. of blood per hour. The blood potassium level rises sharply during the agonal period if death is preceded by severe asphyxia or circulatory failure and then remains relatively stable until 12 to 24 hours have elapsed.

The rate at which putrefaction becomes apparent varies enormously. Persons previously ill with infection or congestive heart failure putrefy more rapidly than those who were in good health before death. Newborn infants are notoriously slow to evince putrefactive change, while persons found in an environment with a temperature more than 80 F reveal well-advanced putrefactive change after 12 to 18 hours. In a milieu of cold air or water, months may elapse before the body reveals significant putrefaction. Occasionally, the entomologist is able to supply information about the time of unwitnessed death after studying forms of insect life that attack the dead body.

In general, estimation of the time of unwitnessed death should be based on cumulative, available evidence rather than on a single observation. Association of death with some timed event is presumably more reliable, and evidence derived by means of association is often more satisfactory than that gained by attempting to establish the time of death by postmortem findings. Yet the former method, too, has shortcomings. Acceptance at face value of statements made by witnesses regarding the time they last saw the decedent alive is fraught with unreliability.

1. Moritz, A. R.: Scientific Evidence in Establishing the Time of Death, Ann. West. Med. & Surg. **6**: 302 (May) 1952.

LIGATION OF THE INFERIOR VENA CAVA IN CARDIAC DECOMPENSATION

Cossio and Perianes [1] of Buenos Aires suggested in 1948 two types of surgical intervention for the relief of the overburdened pulmonary venous system in cardiac decompensation. One type consisted of a procedure in which the blood from the pulmonary venous system was shunted to some sector of the systemic circulation by an anastomosis of a large pulmonary vein with the axillary vein, the splenic vein, or the azygos vein. The second type had for its objective the reduction of the right ventricular output either by means of a tricuspid valvulotomy resulting in tricuspid regurgitation or by means of ligation of the inferior vena cava.

Cossio and Perianes performed vein anastomoses in dogs and also valvulotomies utilizing the jugular vein approach. When valvulotomy was successful, the systolic pressure in the right ventricle fell to approximately 50% of its initial pressure, while it rose only 1 mm. Hg in the right auricle and in the superior vena cava. The systemic pressure in the right ventricle rose later but did not return to the original values, remaining 20 to 30% lower.

Cossio and Perianes subjected five patients with more or less intractable cardiac decompensation to a tricuspid valvulotomy employing the internal jugular vein approach. While the immediate results were gratifying, only one of the patients was alive five months later.

In 1950, Cossio [2] reported on 90 patients in whom ligation of the inferior vena cava was performed for severe cardiac decompensation. The ligation of the inferior vena cava proved to be a more serious operation than the tricuspid valvulotomy, but it was more effective because it permitted the surgeon to see the field of operation and because the procedure constituted at the same time a prophylactic measure against pulmonary embolism. The surgical mortality in the first 20 patients operated on was 25%; in the remaining 70 patients the mortality was reduced to 6%. Early improvement, sometimes very dramatic, was observed in 70% of the patients and was maintained for months, provided medical treatment was continued. The early improvement, the author felt, was due to the diminished amount of blood returning to the heart and the later improvement to the formation of a pool of blood with a slower return in the recumbent position.

Legrand and his co-workers [3] performed ligation of the inferior vena cava below the renal veins in 10 patients with intractable cardiac decompensation. Of these patients, only three were alive a year and a half, one year, and one year and 10 months, respectively. The authors felt that the results were far from being spectacular. They believed, however, that if the operation were performed in less advanced cases, the results, even though purely palliative, would probably be worth while.

d'Allaines and his co-workers [4] operated on 14 patients with mitral stenosis and 2 patients with hypertensive cardiopathy. There was one immediate death; in nine patients phlebitis developed despite heparinization. The immediate results were gratifying. The patients experienced a sense of well-being immediately after the operation. There was no dyspnea even in the recumbent posture; the pulse became slower and stronger. Roentgenograms demonstrated diminution in size of the cardiac shadow and clearance of the pulmonary infiltrations. However, the improvement lasted only three months in three patients. In 11 patients the results were good at the end of six months, and a few of these were able to resume some activity. These authors felt that ligation of the inferior vena cava below the renal veins was the operation of choice in decompensated hearts with pulmonary stasis. The ligation has the effect of retarding the return of venous blood from the lower limbs and the pelvic viscera toward the heart by compelling it to travel over the longer and narrower route of the collateral circulation. The return venous circulation of the liver and kidneys was improved. Excretion of water and salt was increased with resulting diminution of the total blood volume. These effects were usually accompanied by an objective improvement in the symptoms and paradoxically by the disappearance of the previously existing edema of the lower extremities. The indications for the operation were constituted principally by failure to respond to rest, digitalization, salt-free diet, and mercurial diuretics. Phlebitis of lower extremities, particularly when bilateral, constituted a contraindication to ligation.

Donzelot and his associates [5] reported on 50 patients with severe cardiac decompensation in whom they performed ligation of the inferior vena cava. There were 38 with mitral lesions, 9 with hypertension, 2 with aortic lesions, and 1 with myocardial infarction. Ten of the patients died within the first two postoperative weeks. Immediate satisfactory results were obtained in 38 of the 40 surviving patients. Thirty-three patients showed a significant and more persistent improvement during the follow-up period of 4 to 17 months. Twenty-one of the 33 were able to lead fairly normal lives. Nine patients died within 3 to 13 months after the operation. The best results were obtained in patients with cardiac decompensation who still responded to rest and medical therapy. Lian and his co-workers [6] performed ligation of the inferior vena cava on 15 patients with cardiac decompensation. There was no operative death. One patient died three weeks after operation; three patients died within the first three postoperative months; and three additional patients died three, five, and nine months, respectively, after the operation. Satisfactory late results were obtained in only six patients. These results, as well as those of other workers, suggest that, while the operation results in immediate improvement, this will be followed by a 50% mortality in the first six months. The results so far recorded suggest that at best the operation should be regarded as a palliative measure with decided limitations.

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1. Cossio, P., and Perianes, I.: Surgical Treatment of the "Cardiac Lung": Ligation of the Inferior Vena Cava and/or Tricuspid Valvulotomy, J. A. M. A. **140**: 772-776 (July 2) 1949.

2. Cossio, P.: Ligation of the Vena Cava in the Treatment of Heart Failure, Am. Heart J. **43**: 97-102 (Jan.) 1952.

3. Legrand, Vandecasteele, Merlen, and Desruelles: L'opération de Cossio (ligature de la veine cave inférieure dans les cardiopathies décompensées): A propos de 10 observations, Lille chir. **33**: 111-117 (May-June) 1951.

4. d'Allaines, F., and others: Essai de traitement des cardiopathies décompensées par la ligature de la veine cave inférieure, Mém. Acad. de chir. **75**: 791-799 (Nov.-Dec.) 1949.

5. Donzelot, E., and others: Résultats de la ligature de la veine cave inférieure dans 50 cas d'insuffisance cardiaque irréductable, Arch. d. mal. du coeur **44**: 239-262 (March) 1951.

6. Lian, C.; Welti, H., and Morgenthaler, F.: Remarques sur la ligature de la veine cave inférieure dans l'insuffisance cardiaque: Résultats, indications et contre-indications, Presse méd. **60**: 313-315 (March 5) 1952.

ORGANIZATION SECTION

OMISSION IN REPORT OF COMMITTEE ON BLOOD BANKS

The following final paragraphs were omitted, in error, from the report of the Committee on Blood Banks printed in THE JOURNAL June 28, pages 874-875:

The Office of Defense Mobilization has responsibility for striking a balance between civil and military needs in the allocation of "critical" items. Blood and blood derivatives have been placed on the "critical" list.

6. *Blood Derivatives.*—The Committee is keeping abreast of developments in the use of blood fractions. Animal experiments have indicated the desirability of determining whether human gamma globulin is of any value in the control of poliomyelitis in man. Field studies are now being carried out by Dr. William McD. Hammon and his group to determine whether protection can be demonstrated against naturally occurring poliomyelitis in children, and, if so, under what conditions. The results of the pilot human field trials of last summer were inconclusive, due to the very limited numbers of cases occurring in the observed population. Additional field trials will be conducted this summer.

7. *State Committees on Blood Program.*—The importance of the formation of state committees on blood program as previously recommended is again emphasized. Your committee has under study plans for strengthening and greatly increasing the usefulness of these state committees. The Committee hopes to announce these plans not later than the next meeting of the House of Delegates.

8. *Resurvey of Blood Banks.*—Responding to the action of the House in June 1950, the Committee through the Bureau of Medical Economic Research will this fall commence a new survey of the blood banks of the nation. For the purpose of this study the definition of a blood bank will be revised to include only facilities in which donors are bled and blood is stored for a period of days.

The cooperation of physicians in blood banks is greatly needed in making sure that the schedules are accurately filled out and promptly returned.

Respectfully submitted,

LEONARD W. LARSON, Co-Chairman
HERBERT P. RAMSEY, Co-Chairman
JAMES Q. GRAVES
JOHN W. GREEN
DEERING G. SMITH
JAMES STEVENSON
WILLIAM D. STOVALL
FRANK E. WILSON, Secretary

MEDICAL ASPECTS OF CIVIL DEFENSE

The Council on National Emergency Medical Service has just completed the publication of the booklet entitled "Medical Aspects of Civil Defense," which contains the series of articles sponsored by the Council and published in THE JOURNAL during the past year. Many requests have been received for the booklet, which sells for 25 cents a single copy, and 20 cents a copy for orders of 100 or more. Orders should be sent to the Council on National Emergency Medical Service, 535 N. Dearborn, Chicago 10.

MINUTES OF THE SCIENTIFIC SECTIONS

SECTION ON ANESTHESIOLOGY

TUESDAY, JUNE 10—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Stevens J. Martin, Hartford, Conn.

A paper entitled "Evaluation of Trichlorethylene as an Anesthetic and Analgesic Agent," by Drs. William K. Nowill and C. Ronald Stephen, Durham, N. C., and Paul W. Searles, Buffalo, was read by Dr. Nowill. This paper was discussed by Drs. Charles M. Barbour, Hartford, Conn.; Scott M. Smith, Salt Lake City, and William K. Nowill.

A paper entitled "Studies on Resuscitation: An Experimental Evaluation of the Bloxsom Air-Lok," by Drs. Virginia Apgar, New York, and Joseph Kreiselman, Washington, D. C., was read by Dr. Apgar. This paper was discussed by Drs. Ivan B. Taylor, Detroit; Stuart C. Cullen, Iowa City; Nicholson J. Eastman, Baltimore; Paul W. Searles, Buffalo; L. F. Schuhmacher, Houston, Texas; Charles M. Barbour, Hartford, Conn.; Alvan L. Barach, New York; H. F. Helmholz Jr., Rochester, Minn., and Virginia Apgar.

Dr. Alfred H. Iason, Brooklyn, read a paper entitled "Postoperative Pain Control," which was discussed by Drs. Charles D. Anderson, Chicago; Paul H. Lorhan, Kansas City, Kan.; R. V. Gorsch, New York, and Alfred H. Iason.

A paper entitled "Continuous Procaine Blockade of the Paravertebral Sympathetic Ganglia: Observations on 100 Patients," by Drs. Albert M. Betcher, George Bean, and Daniel Casten, New York, was read by Dr. Betcher, and was discussed by Drs. John Adriani, New Orleans; Lawrence D. Ruttle, Joliet, Ill., and Daniel Casten.

Dr. Daniel C. Moore, Seattle, read a paper entitled "Sciatic and Femoral Nerve Block," which was discussed by Drs. Max S. Sadove, Chicago; A. B. Stearns, Detroit, and Daniel C. Moore.

Dr. John J. Bonica, Tacoma, Wash., read a paper entitled "The Role of the Anesthesiologist in the Management of Intractable Pain." This paper was discussed by Dr. Harold F. Bishop, Valhalla, N. Y.

WEDNESDAY, JUNE 11—AFTERNOON

The following officers were elected: chairman, Dr. R. J. Whitacre, East Cleveland, Ohio; vice chairman, Dr. Virginia Apgar, New York; secretary, for three years, Dr. John S. Lundy, Rochester, Minn.; delegate, for two years, Dr. Henry S. Ruth, Philadelphia; alternate delegate, for two years, Dr. Edward B. Tuohy, Washington, D. C.

Dr. Henry S. Ruth, Philadelphia, reported on the activities of the House of Delegates.

Dr. R. J. Whitacre, East Cleveland, Ohio, reported as representative to the American Board of Anesthesiology.

Dr. John S. Lundy, secretary, read a letter announcing the election of Dr. Stuart Cullen as a director of the American Board of Anesthesiology.

Dr. A. William Friend, Akron, Ohio, reported on anesthesia meetings held in Paris, France, in September, 1951.

Dr. Lundy reported on action taken by the executive committee disapproving two resolutions, presented at the Clinical Session of the American Medical Association in Los Angeles in December, 1951, concerning defraying the expenses of delegates in traveling to sessions and the make-up of the executive committee.

Mr. John Hunt, executive secretary of the American Society of Anesthesiologists, spoke on the merits of a proposed insurance program.

A paper entitled "Cardiac Asystole," by Drs. Mary Lou Buckley, Kenneth K. Keown, and Henry S. Ruth, Philadelphia, was read by Dr. Ruth, and was discussed by Drs. Donald E. Hale, Cleveland; V. K. Stoelting, Indianapolis; Ralph T. Knight, Minneapolis, and Kenneth K. Keown.

A paper entitled "The Treatment of Hiccups," by Drs. Albert F. Gigot, Boston, and Paul D. Flynn, Waltham, Mass., was read by Dr. Gigot, and was discussed by Drs. W. Allen Conroy, Chicago; Joe DePree, Grand Rapids, Mich., and Albert F. Gigot.

Dr. Stevens J. Martin, Hartford, Conn., presented the chairman's address, entitled "Anesthesiology: A Challenge."

Dr. John A. Paulson, Rochester, Minn., read a paper entitled "Pentothal-Ether Anesthesia," which was discussed by Drs. Mary Karp, Chicago; Charles F. Jones, Toledo, Ohio., and John A. Paulson.

A paper entitled "The Use of Synthetic Muscle Relaxants in Anesthesiology," by Drs. Francis F. Foldes, Theodore S. Machaj, and Robert D. Hunt, Pittsburgh; Phil C. Carberry, Irvington, N. J., and Pearl G. McNall, Pittsburgh, was read by Dr. Foldes.

A paper entitled "Experience with the Use of Curare Since 1943 in a Large Western Community," by Drs. B. M. Anderson, Oakland, Calif.; E. E. Brinckerhoff, Berkeley, Calif., and E. H. Case, F. E. Davis, and F. M. Thornburg, Oakland, Calif., was read by Dr. Anderson.

These two papers were discussed by Drs. Henry K. Beecher, Boston; Lloyd E. Larrick, Cincinnati; J. Everett McClenahan, Pittsburgh; Ralph T. Knight, Minneapolis; Charles Paul Boyan, New York, and Francis F. Foldes and B. M. Anderson.

Thursday, June 12—Morning

A joint meeting was held with the Section on Diseases of the Chest. The proceedings are reported in the minutes of that section.

SECTION ON DERMATOLOGY AND SYPHILILOGY

Tuesday, June 10—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Francis W. Lynch, St. Paul.

Dr. James R. Webster, Chicago, read a report as section representative to the Scientific Exhibit.

Dr. Harry R. Foerster, Milwaukee, gave the report of the Committee on Occupational Dermatoses, as follows:

Report of the Committee on Occupational Dermatoses

The Joint Committee on Occupational Dermatoses of the American Medical Association, Section on Dermatology and Syphilology, and the American Dermatological Association, met on Dec. 12, 1951, in Chicago. The members present agreed unanimously on reorganization. This committee has usually met annually and in recent years only at meetings of the Academy of Dermatology and Syphilology, where most members were usually available. It was therefore proposed that a new committee be formed to represent the American Medical Association, the American Dermatological Association, and the Academy of Dermatology and Syphilology, such committee to consist of two representatives from each of the three organizations of dermatologists. The Society for Investigative Dermatology was not included in this group because its membership is not restricted to dermatologists.

The original committees were set up to promote and advance information on and education and research in the field of occupational dermatology, particularly industrial dermatology, and to establish a clearing house within the structure of the American Medical Association for collection and dissemination of information in this field. Promotion of the latter objective was contributory to the establishment of the American Medical Association Council on Industrial Health. Since then this committee has functioned primarily in an advisory capacity to the Council and has also cooperated with the Office of Dermatoses Investigations of the United States Public Health Service. The former head of that group is a member of the committee.

At the December 12 meeting the following motion was made by Dr. Marion Sulzberger and seconded by Dr. C. Guy Lane: "It is moved that the Council on Industrial Health of the American Medical Association be requested to appoint a Standing Committee on Occupational Dermatoses; that this Committee be a joint responsibility of the Section on Dermatology of the Scientific Assembly of the American Medical Association, the American Academy of Dermatology and Syphilology, and the American Dermatological Association, each of these groups to be represented by two members; that each of these organizations is to submit names of proposed representatives to the Council on Industrial Health for selection and approval; that representatives of public agencies be invited to sit as ex-officio members of the committee as the situation requires; and that the function of this committee be advisory in nature to the Council on Industrial Health and the details of organization be worked out with the Council on Industrial Health." This motion was discussed by all present and unanimously approved. No stipulation was made as to the tenure of office of appointees and as regards staggering of services, but it was thought that this had best conform with American Medical Association practices with reference to similar committees of other councils.

At this time, in reporting the retirement of the present Committee on Occupational Dermatoses and the resignation of its officers, I wish to present the following motion for your consideration and action: "It is moved that the Section on Dermatology and Syphilology of the American Medical Association approve the motion adopted by its Occupational Dermatoses Committee at its meeting of Dec. 12, 1951, and that the chairman of this section be hereby authorized to make the necessary committee appointments subject to approval of the American Medical Association Council on Industrial Health."

In presenting this final report as chairman I wish to express my appreciation and thanks to members of the committee for their diligent, conscientious and efficient services, over the years, in the interest of industrial dermatology. In expressing to this section and to the American Dermatological Association my appreciation of the privilege and honor of having served on this committee, I believe I may speak in a similar vein in behalf of the other members.

Respectfully submitted,

Charles C. Dennie
John G. Downing
James R. Driver
Fletcher Hall
Joseph Klauder
C. Guy Lane
Edward A. Oliver
Earl Osborne
Samuel Peck
Louis Schwartz
Marion Sulzberger
Leonard Weber
Harry R. Foerster, Chairman.

Dr. Francis W. Lynch, St. Paul, read the chairman's address on "Pruritis Vulvae."

Drs. John F. Madden and Harold G. Ravits, St. Paul, presented a paper on "Enzyme Débridement of Indolent Infected Cutaneous Ulcers," which was discussed by Dr. Davitt A. Felder, Minneapolis.

Drs. Arthur C. Curtis and E. Richard Harrell, Ann Arbor, Mich., presented a paper on "The Association of Dermatomyositis and Malignancy." This paper was discussed by Drs. Ashton L. Welsh, Cincinnati, and Helen O. Curth, New York.

Drs. Harry M. Robinson Jr., Frank H. Figge, and Eugene S. Bereston, Baltimore, presented a paper on "Physiology and Pathogenesis of Microsporon Audouini," which was discussed by Dr. Sture A. M. Johnson, Madison, Wis.

Drs. Otis F. Jillson and Robert Hoekelman, Hanover, N. H., presented a paper on "Further Amplification of the Concept of Dermatophytid," which was discussed by Dr. James H. Mitchell, Chicago.

Drs. Francis A. Ellis and William R. Bundick, Baltimore, presented a paper on "An Appraisal of the Value of the Local Use of Antihistamines." This paper was discussed by Dr. Carl T. Nelson, New York.

Wednesday, June 11—Morning

The following officers were elected: chairman, Dr. John H. Lamb, Oklahoma City; vice chairman, Dr. Royal M. Montgomery, New York; secretary, Dr. J. Walter Wilson, Los Angeles; delegate, Dr. Robert R. Kierland, Rochester, Minn.; alternate delegate, Dr. Winfred A. Showman, Tulsa, Okla.; representative to the American Board of Dermatology and Syphilology, Dr. George M. Lewis, New York; representative to Scientific Exhibit, Dr. James R. Webster, Chicago.

Dr. Hamilton Montgomery, Rochester, Minn., read a paper on "Benign and Malignant Dermal Neoplasms: Clinical and Histologic Distinction," which was discussed by Dr. Marcus R. Caro, Chicago.

Drs. Boynton H. Booth and Roland W. Jones, Indianapolis, presented a paper on "An Epidemiological and Clinical Study of Grain Itch." This paper was discussed by Drs. Leon Goldman, Cincinnati, and John E. Dalton, Indianapolis.

Dr. William J. Morginson, Salt Lake City, presented a paper on "Tinea Capitis (M. Audouini) Managed with Asterol Dihydrochloride," which was discussed by Dr. Edmond K. Edelson, Newark, N. J.

Dr. Theodore Cornbleet, Chicago, presented a paper on "Keloids Treated with Hyaluronidase," which was discussed by Dr. Allen W. Pepple, Richmond, Va.

Drs. A. H. Conrad Jr., Jerome Greenhouse, and Richard S. Weiss, St. Louis, presented a paper on "Treatment of Pemphigus with Oral Cortisone." This paper was discussed by Dr. John R. Haserick, Cleveland.

Drs. Calvin J. Dillaha and Stephen Rothman, Chicago, presented a paper on "Therapeutic Experiments in Alopecia Areata," which was discussed by Drs. M. J. Reuter, Milwaukee, and S. William Becker, Chicago.

Thursday, June 12—Morning

Dr. Herman Pinkus, Monroe, Mich., presented a paper on "Premalignant Fibroepitheliomatous Tumors of the Skin," which was discussed by Dr. Carl W. Laymon, Minneapolis.

Dr. George L. Waldbott, Detroit, presented a paper on "An Analysis of Patterns in Contact Dermatitis on the Hands." This paper was discussed by Dr. Elmer M. Rusten, Minneapolis.

Dr. John C. Slaughter Jr., Evansville, Ind., presented a paper on "Injection Therapy of Hemangiomas," which was discussed by Dr. D. Truett Gandy, Houston, Texas.

Dr. Lawrence M. Nelson, Santa Barbara, Calif., read a paper on "The Use of Podophyllin in Dermatology." This paper was discussed by Dr. Leslie M. Smith, El Paso, Texas.

Dr. A. J. Reiches, St. Louis, read a paper on "Riehl's Belanosis," which was discussed by Dr. S. William Becker, Chicago.

Drs. Robert J. Morgan, Paul O. Shackelford, and John H. Lamb, Oklahoma City, presented a paper on "Unusual Sunlight Eruptions," which was discussed by Dr. Arthur R. Woodburne, Denver.

SECTION ON DISEASES OF THE CHEST

Tuesday, June 10—Morning

The meeting was called to order at 9:20 a. m., by the chairman, Dr. J. Winthrop Peabody, Washington, D. C.

Dr. J. Winthrop Peabody, Washington, D. C., read the chairman's address on "Recent Trends in Diseases of the Chest."

Drs. Leon Unger and Albert H. Unger, Chicago, presented a paper on "The Treatment of Bronchial Asthma."

Drs. H. A. Andersen and C. B. Holman, Rochester, Minn., presented a paper on "Pulmonary Complications of Cardiospasm."

Dr. Carl W. Tempel, Denver, Colo., read a paper on "Present Status of Drugs in Treatment of Tuberculosis."

Drs. Irving J. Selikoff, Paterson, N. J., and Edward H. Robitzek, Staten Island, N. Y., presented a paper on "Treatment of Human Tuberculosis with Hydrazine Derivatives of Isonicotinic Acid."

Drs. M. E. Flipse, Rochester, Minn., and G. A. Hedberg and Victor R. Krueger, Nopeming, Minn., presented a paper on "Water-Soluble Contrast Media for Bronchography."

Drs. C. B. Rabin and Rudolph Kramer, New York, presented a paper on "Juxtacarina Biopsy in Evaluation of Operability of Bronchial Carcinoma."

Drs. Joshua Fields and L. Allen Smith, Los Angeles, and Myron Prinzmetal, Beverly Hills, Calif., presented a paper on "The Wolff-Parkinson-White Syndrome."

Wednesday, June 11—Morning

The following officers were elected: chairman, Dr. Joseph C. Placak, Cleveland; vice chairman, Dr. Jay Arthur Myers, Minneapolis; secretary, Dr. John F. Briggs, St. Paul; delegate, Dr. Hollis E. Johnson, Nashville, Tenn.; alternate delegate, Dr. Edward W. Hayes, Monrovia, Calif.

Drs. S. A. Slater, Worthington, Minn., and A. L. Vadheim, Tyler, Minn., presented a paper on "Tuberculosis Control in Lincoln County, Minnesota."

Drs. Richard Overholt, J. H. Walker, and F. M. Woods, Brookline, Mass., presented a paper on "Hidden or Unsuspected Bronchiectasis in the Asthmatic."

Dr. Hans H. Hecht, Salt Lake City, read a paper on "Polycythemia and Heart Failure in Chronic Lung Disease."

Dr. Porter P. Vinson, Richmond, Va., read a paper on "The Diagnosis and Treatment of Patients Suffering from Simple Bronchial Erosion with Pulmonary Hemorrhage."

Dr. N. D. D'Esopo, Sunmount, N. Y., read a paper on "Recent Trends in the Treatment of Pulmonary Tuberculosis."

Drs. Alvan L. Barach and Gustav J. Beck, New York; H. E. Seanor, Rye, N. Y., and H. A. Bickerman, New York, presented a paper on "Mechanically Induced 'Coughing' in Poliomyelitis, Bronchial Asthma and Bronchiectasis."

Drs. Reginald H. Smart, Los Angeles; C. K. Davenport, Fontana, Calif., and G. W. Pearson, Los Angeles, presented a paper on "Intermittent Positive-Pressure Breathing in the Treatment of Chronic Pulmonary Diseases."

THURSDAY, JUNE 12—MORNING

Joint Meeting with Section on Anesthesiology

Dr. James J. Waring, Denver, read a paper on "Chest Conditions of Mutual Concern to Chest Specialists and Anesthesiologists." This paper was discussed by Drs. James H. Walker, Brookline, Mass., and Lloyd H. Mousel, Seattle.

Drs. Barnett A. Greene and Samuel Berkowitz, Brooklyn, presented a paper on "The Prevention of Postoperative Pulmonary Complications by a Program Dependent Entirely on the Anesthesiologist." This paper was discussed by Drs. Paul H. Holinger and Willis J. Potts, Chicago.

Drs. J. Maxwell Chamberlain and Charles F. Daniels, New York, presented a paper on "The Relationship of Pain Control to Pulmonary Surgery," which was discussed by Drs. Karl H. Pfuetze, Glenn Ellyn, Ill., and Ralph T. Knight, Minneapolis.

Dr. C. Rollins Hanlon, St. Louis, read a paper on "The Role of Diagnosis and Anesthesia in Surgery of the Heart." This paper was discussed by Drs. Thomas J. Dry, Rochester, Minn., and William O. McQuiston, Peoria, Ill.

Drs. Fred J. Hodges and Robert S. MacIntyre, Ann Arbor, Mich., presented a paper on "Radiologic Aspects of Intrathoracic Disease," which was discussed by Drs. Herbert C. Maier, New York, and R. J. Whitacre, East Cleveland, Ohio.

Drs. Arthur M. Olsen and John W. Pender, Rochester, Minn., presented a paper on "Peroral Endoscopy: The Preparation of Patients." This paper was discussed by Drs. John D. Steele, Milwaukee, and Arthur Q. Penta, Schenectady, N. Y.

Drs. C. P. Bailey, H. P. Redondo-Ramirez, and H. B. Larzelere, Philadelphia, presented a paper on "The Surgical Treatment of Aortic Stenosis," which was discussed by Dr. Kenneth Keown, Philadelphia.

SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

TUESDAY, JUNE 10—MORNING

The meeting was called to order at 9:20 a. m., by the secretary, Dr. Hugh R. Butt, Rochester, Minn.

The following papers were read as a symposium on "Use of Chemotherapeutic and Antibiotic Agents:"

Dr. Hattie E. Alexander, New York: "In Infections of the Central Nervous System." This paper was discussed by Drs. Harry F. Dowling, Chicago, Francis H. Redewill, San Francisco, and Hattie E. Alexander, New York.

Dr. William A. Altemeier, Cincinnati: "In Infections of the Skeletal System." This paper was discussed by Drs. Guy A. Caldwell, New Orleans, and Champ Lyons, Birmingham, Ala.

Dr. Wallace E. Herrell, Rochester, Minn.: "In Infections of the Blood Stream and Heart." This paper was discussed by Drs. Thomas H. Hunter, St. Louis, Perrin H. Long, Brooklyn, and Wallace E. Herrell, Rochester, Minn.

Dr. Monroe J. Romansky, Washington, D. C.: "In Infections of the Respiratory System." This paper was discussed by Drs. A. M. Olsen, Rochester, Minn., Martin H. Seifert, Wilmette, Ill., Perrin H. Long, Brooklyn, and Monroe J. Romansky, Washington, D. C.

Drs. Reed M. Nesbit, William C. Baum, and Austin I. Dodson Jr., Ann Arbor, Mich.: "In Infections of the Genito-Urinary Tract." This paper was discussed by Drs. Grayson Carroll, St. Louis, and Russell D. Herrold, Chicago.

Dr. John D. Hughes, Memphis, Tenn.: "In Diseases of the Gastro-Intestinal Tract." This paper was discussed by Drs. Sidney Ross and Edwin J. Pulaski, Washington, D. C.

WEDNESDAY, JUNE 11—MORNING

The following officers were elected: chairman, Dr. M. H. Seevers, Ann Arbor, Mich.; vice chairman, Dr. Irvine H. Page, Cleveland; secretary, Dr. Hugh R. Butt, Rochester, Minn.; delegate, Dr. Edgar V. Allen, Rochester, Minn.

The secretary took the chair while Dr. Carl V. Moore, St. Louis, gave the chairman's address, entitled "Problems Created by a National Blood Program: The Excessive Use of Blood Transfusions and the Effect of Frequent Donations on the Iron Requirements of Donors."

The Minot Lecture, "Some Aspects of the Leukemia Problem," was delivered by Dr. Cyrus C. Sturgis, Ann Arbor, Mich.

Drs. Charles C. Sprague and William J. Harrington, St. Louis, R. D. Lange, Kirkwood, Mo., and J. P. Shapleigh, St. Louis, presented a paper entitled "Platelet Transfusion and the Pathogenesis of Idiopathic Thrombocytopenic Purpura," which was discussed by Dr. Frank H. Gardner, Boston.

Dr. Lawrence E. Young, Rochester, N. Y., presented a paper on "The Differentiation Between Acquired and Congenital Forms of Hemolytic Anemia," which was discussed by Drs. Karl Singer, Chicago, J. Minott Stickney, Rochester, Minn., Israel Davidsohn, Chicago, and Lawrence E. Young, Rochester, N. Y.

Drs. Charles P. Bailey, George D. Geckeler, Raymond C. Truex, and William Likoff, Philadelphia, Nicholas A. Antonius, Newark, N. J., Armand W. Angulo and Hector P. Redondo-Ramirez, Philadelphia, presented a paper on "Arteriolization of the Coronary Sinus." This paper was discussed by Drs. Claude S. Beck and Harold Feil, Cleveland, and Joseph T. Roberts, Buffalo.

Drs. Simon Rodbard and Gerald R. Graham, Chicago, presented a paper on "Effect of Ingested Alumina Preparations on the Plasma Cholesterol Level in Man," which was discussed by Dr. Alex Kaplan, Chicago, and Simon Rodbard, Chicago.

THURSDAY, JUNE 12—MORNING

Joint Meeting with Section on Internal Medicine

The following papers were read as a symposium on "Recent Advances in Diabetes Mellitus:"

Dr. DeWitt Stetten Jr., New York: "Pathogenesis." This paper was discussed by Drs. Rachmiel Levine and Konrad Bloch, Chicago, and DeWitt Stetten Jr., New York.

Dr. Jonas S. Friedenwald, Baltimore: "Ocular Changes." This paper was discussed by Drs. Paul Kimmelstiel, Charlotte, N. C., Francis H. Adler, Philadelphia, and George W. Dana and Jonas S. Friedenwald, Baltimore.

Drs. Alexander Marble and Howard F. Root, Boston: "Degenerative Vascular Complications." This paper was discussed by Drs. Lester J. Palmer, Seattle, James W. Sherrill, La Jolla, Calif., and Alexander Marble, Boston.

Dr. Henry T. Ricketts, Chicago: "Modern Treatment." This paper was discussed by Drs. Carlos P. Lamar, Miami, Fla., and Henry T. Ricketts, Chicago.

Dr. Randall G. Sprague, Rochester, Minn.: "Diabetic Coma." This paper was discussed by Drs. Henry B. Mulholland, Charlottesville, Va., James A. Greene, Houston, Texas, and Randall G. Sprague, Rochester, Minn.

Dr. Edwin L. Rippy, Dallas, Texas: "The Improved Outlook of the Diabetic Patient." This paper was discussed by Drs. Russell M. Wilder, Bethesda, Md., and Leon S. Smelo, Birmingham, Ala.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

Tuesday, June 10—Morning

The meeting was called to order at 9:10 a. m., by the chairman, Dr. Grant H. Laing, Chicago.

Drs. Jacob Lichstein and Leonard M. Asher, Los Angeles, presented a paper entitled, "Benign Gastric Mucosal Prolapse into Duodenum," which was discussed by Drs. Walter L. Palmer, Chicago, Moses Paulson, Baltimore, Jacob Lichstein, Los Angeles, and P. A. Tuckwiller, Charleston, W. Va.

Dr. Frank B. McGlone, Denver, read a paper on "Total Gastrectomy Problem: Cecal Transposition, Physiological Follow-Up." This paper was discussed by Drs. Claude Marshall Lee Jr., Cincinnati, Moses Paulson, Baltimore, Emerick Szilagyi, Detroit, Walter L. Palmer, Chicago, M. E. Steinberg, Portland, Ore., and Frank B. McGlone, Denver.

Dr. Alejandro F. Castro, Washington, D. C., read a paper on "Adenomatous Polyps of the Colon and Rectum."

Drs. Paul L. Shallenberger and Peter Fisher, Sayre, Pa., presented a paper entitled "Sigmoidoscopy: An Analysis of 3,500 Consecutive Cases." This paper was discussed by Drs. George E. Binkley, New York, Patrick H. Hanley, New Orleans, Foster L. McMillan, Chicago, Curtice Rosser, Dallas, Texas, Alejandro F. Castro, Washington, D. C., and Paul L. Shallenberger, Sayre, Pa.

A paper entitled, "Five Year Follow-Up on Patients with Duodenal Ulcer Treated by Vagotomy and Gastroenterostomy Compared with a Group Treated with Subtotal Resection," was presented by Drs. H. Marvin Pollard, Robert J. Bolt, Henry K. Ransom, and John E. Orebaugh, Ann Arbor, Mich., and was discussed by Drs. Frank H. Lahey, Boston, Lester R. Dragstedt, Chicago, M. E. Steinberg, Portland, Ore., and H. Marvin Pollard, Ann Arbor, Mich.

Dr. Lester M. Morrison, Los Angeles, read a paper on "Results of Azopyrine Treatment in Chronic Ulcerative Colitis," which was discussed by Drs. J. Arnold Bargen, Rochester, Minn., John M. McMahon, Bessemer, Ala., Sidney Portis, Chicago, and Lester M. Morrison, Los Angeles.

Wednesday, June 11—Morning

The following officers were elected: chairman, Dr. Louis E. Moon, Omaha; vice chairman, Dr. Donovan C. Browne, New Orleans; secretary, Dr. Everett D. Kiefer, Boston; representatives to Scientific Exhibit, Dr. William H. Dearing, Rochester, Minn., and J. P. Nesselrod, Evanston, Ill.; member of American Board of Proctology to fill unexpired term of Dr. Curtice Rosser, resigned, Dr. H. R. Reichman, Salt Lake City; alternate delegate for a two year term, Dr. Raymond J. Jackman, Rochester, Minn.

Dr. Louis E. Moon, Omaha, reported a list of men certified as diplomates in anorectal surgery and a list of those certified as diplomates in proctology by the American Board of Proctology.

The chairman, Dr. Grant H. Laing, Chicago, presented a list of candidates passed and certified during 1951-1952 by the American Board of Gastro-Enterology.

Dr. Emil Granet, New York, read a paper on "Sigmoido-Rectal Intussusception," which was discussed by Drs. R. A. Peyster, and C. L. Martin, Chicago.

Dr. Grant H. Laing, Chicago, read the chairman's address entitled "Trends in Gastro-Enterology and Proctology."

Dr. R. Russell Best, Omaha, Neb., read a paper on "An Evaluation of Ileoproctostomy to Avoid Ileostomy in Various Colon Lesions." This paper was discussed by Dr. Mark M. Ravitch, Baltimore, and Dr. Guy V. Pontius, Chicago.

Drs. A. I. Friedman, Hackensack, N. J., and Richard H. Marshak and Harry Yarnis, New York, presented a paper on "Giant Benign Gastric Ulcers."

A paper on "Fate of Patients with Surgically Untreated Small Gastric Ulcers," was presented by Drs. James C. Cain, George L. Jordan, Mandred W. Comfort, and Howard K. Gray, Rochester, Minn.

These two papers were discussed by Drs. Russell S. Boles, Philadelphia, Joseph B. Kirsner, Chicago, A. I. Friedman, Hackensack, N. J., and James C. Cain, Rochester, Minn.

Thursday, June 12—Morning

Joint Meeting with Section on Pathology and Physiology

Dr. Eleanor M. Humphreys, Chicago, read a paper on "The Thymus and Thymic Tumors in Myasthenia Gravis," which was discussed by Drs. J. Alfred Rider and Edwin F. Hirsch, Chicago.

Dr. Byron E. Hall, Rochester, Minn., read a paper on "The Treatment of Nutritional Anemia." This paper was discussed by Drs. Grant H. Laing and Leon Jacobson, Chicago, and Byron E. Hall, Rochester, Minn.

Dr. Louis R. Limarzi, Chicago, read a paper on "The Meaning of Bone Marrow Studies: A Clinical Pathological Evaluation Based on Over 7,000 Marrow Examinations," which was discussed by Drs. S. A. Levinson, and Matthew H. Block, Chicago.

Drs. Burrill B. Crohn and Henry D. Janowitz, New York, presented a paper on "Acute Esophageal and Gastric Hemorrhage."

Dr. John R. Hill, Rochester, Minn., read a paper on "The Etiology of Pain in the Anorectal Region." This paper was discussed by Drs. Willard L. Cooper, Lexington, Ky., and Lyman R. Pearson, Indianapolis.

SECTION ON GENERAL PRACTICE

Tuesday, June 10—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Thomas E. Robinson, Salt Lake City.

Dr. Thomas E. Robinson, Salt Lake City, read the chairman's address, "The General Practitioner Takes a Look."

A Symposium and Panel Discussion on Atherosclerosis: Etiology, Pathogenesis, Treatment, and Prevention was conducted by Dr. Louis N. Katz, Chicago, Moderator, with the following participants: Drs. S. L. Wilens and Forrest E. Kendall, New York; Irvine H. Page, Cleveland; Jeremiah Stamler, Chicago; Fredrick J. Stare, Boston; Campbell Moses, Pittsburgh; Thomas M. Durant, Philadelphia; George E. Burch, New Orleans; Irving S. Wright, New York; Nelson W. Barker, Rochester, Minn.; R. Gordon Gould, Los Alamos, N. Mex.; and John W. Gofman, San Francisco.

Wednesday, June 11—Afternoon

Dr. Paul A. Davis, Akron, Ohio, presented the report of the delegate to the House of Delegates.

The following officers were elected: chairman, Dr. Richard A. Mills, Fort Lauderdale, Fla.; vice chairman, Dr. L. C. Burwell, Los Angeles; delegate, Dr. Paul A. Davis, Akron, Ohio; alternate delegate, Dr. Milton B. Casebolt, Kansas City, Mo.

Dr. William H. Walton, Belleville, Ill., presented a resolution urging that the Council on Medical Education and Hospitals encourage adequate general practice residencies in approved hospitals. The resolution was amended by Dr. Lester D. Bibler, Indianapolis, to stipulate that the delegate to the House of Delegates present the resolution at the interim session in the fall and was adopted.

The chairman announced the appointment of a program advisory committee to assist the secretary, composed of the following: Drs. Joseph C. Lindner, Cincinnati; Charles E. McArthur, Olympia, Wash.; Fred A. Humphrey, Fort Collins, Colo.

The chairman announced the appointment of an award committee for establishing an award for the outstanding paper given before the section by a general practitioner, composed of the following: Drs. Milton B. Casebolt, Kansas City, Mo., chairman; Eugene I. Baumgartner, Oakland, Md.; Winfred B. Harm, Detroit.

Dr. Wilfred C. Hulse, New York, presented a paper on "The Management of Sexual Conflicts in General Practice," which was discussed by Drs. Joseph C. Lindner, Cincinnati, Thomas E. Rardin, Columbus, Ohio, and William S. Kroger, Evanston, Ill.

A paper on "'Two-Step' Exercise Electrocardiogram: A Follow-Up Investigation in Patients with Chest Pain and Normal Resting Electrocardiogram," was presented by Drs. Arthur M. Master, Leon Pordy, and Kenneth Chesky, New York, and was discussed by Dr. Harry L. Jaffe, New York.

Dr. John G. Kuhns, Boston, read a paper on "Management of Osteoarthritis in the Aged," which was discussed by Drs. Edward F. Rosenberg and Granville A. Bennett, Chicago, and William S. Collens, Brooklyn.

Dr. E. H. Steffensen, Detroit, read a paper on "ACTH and Cortisone in the Treatment of Ocular Diseases," which was discussed by Drs. George J. Hamwi, Columbus, Ohio, and Dan M. Gordon, New York.

Drs. Sidney A. Portis and Charles H. Lawrence, Chicago, presented a paper on "Intractable Duodenal Ulcer." This paper was discussed by Drs. Waltman Walters, Rochester, Minn., and Moses Paulson, Baltimore.

Dr. Laurence W. Kinsell, Oakland, Calif., read a paper on "Newer Concepts in the Use of ACTH and Cortisone in Clinical Practice."

Dr. Philip Thorek, Chicago, presented a paper on "Practical Aspects of Inguinal Hernia."

Thursday, June 12—Morning

Joint Meeting with Section on Physical Medicine and Rehabilitation

Dr. Louis J. Karnosh, Cleveland, read a paper on "Hemiplegia: Pathology and Differential Diagnosis," which was discussed by Dr. Morton Marks, New York.

Drs. Earl C. Elkins and Joseph G. Rushton, Rochester, Minn., presented a paper on "Hemiplegia: Treatment in the Acute Phase." This paper was discussed by Dr. Sedgwick Mead, St. Louis.

Dr. Leonard J. Yamshon, Los Angeles, read a paper on "Hemiplegia: Rehabilitation Procedures," which was discussed by Drs. Harold Dinken, Denver, and Joseph G. Benton, New York.

A paper on "Early Management of the Paraplegic" was presented by Drs. Donald A. Covalt, Irving S. Cooper, Howard A. Rusk, and Thomas Hoen, New York. This paper was discussed by Dr. Louis B. Newman, Hines, Ill.

Dr. Duane A. Schram, Gonzales, Texas, read a paper on "Poliomyelitis: Present Concepts of Physical Medicine and Rehabilitation."

SECTION ON INTERNAL MEDICINE

Tuesday, June 10—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Carter Smith, Atlanta, Ga.

Dr. Willard O. Thompson, Chicago, presented a paper on "Present Status of ACTH and Cortisone," which was discussed by Dr. Edmund L. Dubois, Los Angeles.

Drs. L. Emmerson Ward, Philip S. Hench, Charles H. Slocumb, and Howard F. Polley, Rochester, Minn., presented a paper on "Cortisone in the Treatment of Rheumatoid Arthritis." This paper was discussed by Drs. Walter Bauer, Boston, Edward Boland, Los Angeles, Willard O. Thompson, Chicago, and L. Emmerson Ward, Rochester, Minn.

Dr. George H. Coleman, Chicago, delivered the Billings Lecture: "Focal Infection: Status After Forty Years."

Dr. Eugene F. Traut, Chicago, presented a paper on "Further Experiences with Procaine Amide in Treatment of Skeletal Pain," which was discussed by Dr. David J. Graubard, New York.

Drs. James A. Evans, Boston; Hyman J. Rubitsky, Roxbury, Mass., and Albert W. Perry, Victoria, B. C., presented a paper on "The Treatment of Diffuse Progressive Scleroderma." This paper was discussed by Drs. Robert R. Kierland, Rochester, Minn., Stephen Rothman, Chicago, and James A. Evans, Boston.

Dr. Bernard I. Lewis, Iowa City, presented a paper on "Psychosomatic Disorders and the Nonpsychiatrist," which was discussed by Drs. Walter L. Palmer, Chicago, and Joseph S. Skobba, Atlanta, Ga.

Dr. David T. Carr, Rochester, Minn., presented a paper on "The Current Status of Antimicrobial Therapy of Tuberculosis," which was discussed by Drs. Donald S. King, Brookline, Mass., and Du Mont F. Elmendorf, New York.

Wednesday, June 11—Afternoon

The following officers were elected: chairman, Dr. Truman G. Schnabel, Philadelphia; vice chairman, Dr. Howard P. Lewis, Portland, Ore.; secretary, Dr. Herrman L. Blumgart, Boston; three representatives on the American Board of Internal Medicine, Drs. William B. Castle, Boston; W. Barry Wood, St. Louis; Herrman L. Blumgart, Boston; delegate, Dr. Charles T. Stone Sr., Galveston, Texas; alternate delegate, Dr. William D. Stroud, Philadelphia.

Dr. John J. Sampson, San Francisco, presented a paper on "The Treatment of Cardiac Arrhythmias," which was discussed by Drs. Bruce Logue, Emory University, Ga., and John J. Sampson, San Francisco.

Dr. A. Carlton Ernstene, Cleveland, presented a paper on "The Complications and Sequelae of Acute Myocardial Infarction." This paper was discussed by Drs. Robert L. King, Seattle, G. K. Fenn, Chicago, and A. Carlton Ernstene, Cleveland.

Drs. Henry L. Jaffe, Maurice H. Rosenfeld, Frederick W. Pobirs, and Laurence J. Stuppy, Los Angeles, presented a paper on "End Result Study of 100 Patients with Advanced Heart Disease Treated with Radioiodine," which was discussed by Drs. Samuel Simkins, Philadelphia, Herrman L. Blumgart, Boston, and Henry L. Jaffe, Los Angeles.

Dr. Carter Smith, Atlanta, Ga., gave the chairman's address entitled "The Prognosis in Myocardial Infarction: A Clinical Follow-Up of 100 Patients over a Period of Ten to Twenty Years."

Dr. Irving S. Wright, New York, presented a paper on "An Evaluation of New Anticoagulants," which was discussed by Drs. Charles E. Thompson, Chicago, Samuel Baer, Philadelphia, and Irving S. Wright, New York.

Drs. Milton S. Sacks, Joseph B. Workman, and Elsa F. Jahn, Baltimore, presented a paper on "The Diagnosis and Treatment of Acquired Hemolytic Anemia." This paper was discussed by Drs. Raphael Isaacs, Chicago, C. Starr Wright, Columbus, Ohio, and Israel Davidsohn, Chicago.

Drs. Edwin E. Osgood and Arthur J. Seaman, Portland, Ore., presented a paper on "Treatment of Chronic Leukemias: Results of Treatment of 163 Patients by Titrated, Regularly Spaced Total Body Radioactive Phosphorus or Roentgen Irradiation." This paper was discussed by Drs. Howard L. Alt, Chicago, Robert W. Heinle, Cleveland, John H. Lawrence, Berkeley, Calif., and Edwin E. Osgood, Portland, Ore.

THURSDAY, JUNE 12—MORNING

A joint meeting was held with the Section on Experimental Medicine and Therapeutics. The proceedings are reported in the minutes of that section.

SECTION ON LARYNGOLOGY, OTOLOGY, AND RHINOLOGY

TUESDAY, JUNE 10—AFTERNOON

Dr. F. Lambert McGannon, Lakewood, Ohio, read a paper on "Some Practical Aids in the Management of Otolaryngologic Allergy," which was discussed by Drs. Walter E. Owen, Peoria, Ill., George E. Shambaugh Jr., Chicago, Fred W. Dixon, Cleveland, and Raiph J. Frackelton, Lakewood, Ohio.

Dr. Gordon F. Harkness, Davenport, Iowa, gave his report as delegate of the section.

Dr. Robert E. Ryan, St. Louis, read a paper on "The Differential Diagnosis and the Present and Future Treatment of Certain Types of Headache." This paper was discussed by Drs. Baynard T. Horton, Rochester, Minn., J. Milton Robb, Detroit, Gordon F. Harkness, Davenport, Iowa, and Sam H. Sanders, Memphis, Tenn.

Drs. Russell A. Sage and Maynard K. Hine, Indianapolis, presented a paper on "The Problem of the Sore Mouth," which was discussed by Drs. Paul M. Moore, Cleveland, O. E. Hallberg, Rochester, Minn., J. Allan Weiss, Chicago, and Joseph I. Kemler, Baltimore.

Drs. John J. Shea, Memphis, Tenn., and John J. Shea Jr., Camp Bainbridge, Md., presented a paper on "The Use and Abuse of Antibiotics in Otolaryngological Conditions." This paper was discussed by Drs. O. E. Van Alyea, Chicago, and K. M. Simonton, Rochester, Minn.

A film on neck dissection was presented by Dr. Dean M. Lierle, Iowa City.

WEDNESDAY, JUNE 11—AFTERNOON

The following officers were elected: chairman, Dr. Dean M. Lierle, Iowa City; vice chairman, Dr. F. W. Davidson, Danville, Pa.; secretary, Dr. Sam H. Sanders, Memphis, Tenn.; delegate, Dr. Gordon F. Harkness, Davenport, Iowa; alternate delegate, Dr. Charles D. Blassingame, Memphis, Tenn.

Dr. Carl H. McCaskey, Indianapolis, read the chairman's address on "How Much Otolaryngology Should Be Taught to the General Practitioner?"

Dr. Louis H. Clerf, Philadelphia, read a paper on "Unilateral Paralysis of the Vocal Cords," which was discussed by Drs. Oliver W. Suehs, Austin, Texas, Lewis F. Morrison, San Francisco, Robert B. Lewy, Chicago, and Oskar Hirsch, Boston.

Dr. K. M. Simonton, Rochester, Minn., read a paper on "The Selection of Patients for Surgical Procedures in Chronic Suppurative Otitis Media." This paper was discussed by Drs. Robert Boswell, Dayton, Ohio, Robert B. Lewy, Chicago, and J. Milton Robb, Detroit.

Dr. Neill Goltz, St. Paul, read a paper on "Autonomic Dysfunction in the Inner Ear," which was discussed by Drs. Raymond E. Jordon, Pittsburgh, F. W. Davidson, Danville, Pa., K. M. Simonton, Rochester, Minn., Joseph I. Kemler, Baltimore, and J. Milton Robb, Detroit.

THURSDAY, JUNE 12—MORNING

A joint meeting was held with the Section on Pediatrics. The proceedings are reported in the minutes of that section.

SECTION ON MISCELLANEOUS TOPICS

Session on Allergy

WEDNESDAY, JUNE 11—AFTERNOON

The meeting was called to order at 2 o'clock by the co-chairman, Dr. Harold A. Abramson, New York.

A paper on "Psychodynamic Pharmacology of the Treatment of Asthma" was presented by Dr. Harold A. Abramson, New York.

Dr. John M. Sheldon, Ann Arbor, Mich., presented a paper on "The Skin Test and Its Diagnostic Value in Clinical Allergy," which was discussed by Drs. Hal M. Davison, Atlanta, Ga., and Harold A. Abramson, New York.

Dr. Boen Swinney, San Antonio, Texas, then presented a paper on "Pollen and Mould Allergy in the Southwest." This paper was discussed by Drs. Ray M. Balyeat, Oklahoma City, and David R. Barglow, Trinidad, Colo.

Dr. Robert Chobot, New York, presented a paper on "Infectious Factors in Pediatric and Adult Allergy," which was discussed by Drs. Harry R. Weil, Milwaukee, Granville F. Knight, Santa Barbara, Calif., and Harry L. Huber, Chicago.

A panel discussion was held on "ACTH and Cortisone and Their Use in the Allergic Diseases" in which the participants were Drs. Horace S. Baldwin, New York, Moderator, Carl E. Arbesman, Buffalo, Augustus Gibson, Rahway, N. J., Albert H. Holland, Chicago, Giles A. Koelsche, Rochester, Minn., M. Murray Peshkin, New York, and Bram Rose, Montreal, Canada.

SECTION ON MILITARY MEDICINE

TUESDAY, JUNE 10—MORNING

Joint Meeting with Section on Preventive and Industrial Medicine and Public Health and Section on Radiology

The meeting was called to order at 9:05 a. m. by the chairman of the Section on Military Medicine, Dr. Melvin A. Casberg, Washington, D. C.

Dr. H. S. Etter, Washington, D. C., read a paper on "Atomic Warfare Defense and the Navy," which was discussed by Dr. E. R. King, Bethesda, Md.

Dr. Elbert DeCoursey, Washington, D. C., presented a paper on "Pathologic Effects of Total Body Irradiation." This paper was discussed by Dr. Gerald M. McDonnel, Washington, D. C.

The chair was assumed by the chairman of the Section on Radiology, Dr. Ira H. Lockwood, Kansas City, Mo.

Dr. Frank Princi, Cincinnati, read a paper on "Diseases of the Chest Having an Occupational Origin: Industrial Medical Aspects," which was discussed by Dr. Oscar A. Sander, Milwaukee.

Dr. Eugene P. Pendergrass, Philadelphia, presented a paper on "Diseases of the Chest Having an Occupational Origin: Radiologic Aspects." This paper was discussed by Dr. Oscar A. Sander, Milwaukee.

The chair was assumed by the chairman of the Section on Preventive and Industrial Medicine and Public Health, Dr. Carey P. McCord, Ann Arbor, Mich.

Dr. O. Merton Derryberry, Chattanooga, Tenn., read a paper on "The Present Status of Mass Screening Techniques for Chest: Industrial Medical Aspects."

Dr. Arthur C. Christie, Washington, D. C., read a paper on "The Present Status of Mass Screening Techniques for Chest: Radiologic Aspects."

The papers of Drs. Derryberry and Christie were discussed by Drs. Leo G. Rigler, Minneapolis, S. F. Thomas, Palo Alto, Calif., and Robert J. Anderson, Washington, D. C.

Wednesday, June 11—Morning

The following officers were elected: chairman, Dr. Richard A. Kern, Philadelphia; vice chairman, Dr. Dan C. Ogle, Washington, D. C.; secretary, Dr. Sheldon S. Brownton, Washington, D. C.; representative to Scientific Exhibit, Dr. R. V. Schultz, Washington, D. C.

Dr. Melvin A. Casberg, Washington, D. C., read the chairman's address on "Military Medicine." This paper was discussed by Drs. George E. Armstrong, H. Lamont Pugh, and Harry G. Armstrong, Washington, D. C.

Dr. I. S. Radvin, Philadelphia, read a paper on "Plasma Expanders," which was discussed by Dr. Lloyd R. Newhouser, Chelsea, Mass.

Dr. William W. Frye, New Orleans, read a paper on "The Treatment of Acute Amebic Dysentery in a Prisoner of War Camp." This paper was discussed by Drs. Bernard T. Garfinkel and Paul Lindsay, Washington, D. C.

A paper entitled "Wound Ballistics and Body Armor" by Dr. Robert H. Holmes, Washington, D. C., was presented and was discussed by Drs. Oscar P. Hampton Jr., St. Louis, and John S. Cowan, Washington, D. C.

Dr. Albert J. Glass, San Francisco, read a paper on "Current Military Psychiatric Problems," which was discussed by Drs. Charles A. Crandell, Greystone Park, N. J., and David Hamburg, Washington, D. C.

Thursday, June 12—Morning

Dr. Harris B. Shumacker Jr., Indianapolis, read a paper on "Shock and Vascular Injury," which was discussed by Drs. Howard E. Snyder, Winfield, Kan., and Sam F. Seeley, Washington, D. C.

Dr. Paul A. Campbell, Randolph Field, Texas, read a paper on "Flight Beyond the Atmosphere," which was discussed by Drs. Clayton S. White, Albuquerque, N. Mex., and Otis B. Schreuder, Dayton, Ohio.

There was a panel discussion on "Medical Military Personnel Matters," in which Dr. Stanley W. Olson, Chicago, was Moderator, and the participants were Drs. Melvin A. Casberg, A. H. Staderman, Paul C. Barton, J. F. McDonough, and Harold W. Glattly, Washington, D. C., Francis R. Manlove, Chicago, Erwin C. Drescher, Washington, D. C., Paul G. Armstrong, Chicago, and Roy Wolford, Washington, D. C.

The contributions presented by the panel were discussed by Drs. Harold S. Diehl, Minneapolis, and Arthur F. Mead, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

Tuesday, June 10—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. Frank H. Luton, Nashville, Tenn.

Dr. Arthur A. Ward Jr., Seattle, read a paper entitled "Experimental Head Injury," which was discussed by Drs. Joseph P. Evans, Cincinnati, A. Earl Walker, Baltimore, and Arthur A. Ward, Seattle.

A paper entitled "Thrombosis of the Internal Carotid Artery in the Neck and in the Cranial Cavity: Symptoms and Signs, Diagnosis and Treatment," was presented by Drs. E. S. Gurdjian and John E. Webster, Detroit, and was discussed by Drs. Harold C. Voris, Chicago, and E. S. Gurdjian, Detroit.

A paper entitled "The Surgical Treatment of Cervical Intervertebral Disc Lesions," was presented by Drs. R. Glen Spurling and Ludwig H. Segerberg, Louisville, Ky., and was discussed by Drs. Loyal Davis, Chicago, Hans H. Reese, Madison, Wis., and R. Glen Spurling, Louisville, Ky.

A paper entitled "The Recognition of Surgically Treatable Neurologic Disorders of Childhood," was presented by Drs. Jonathan M. Williams and Harold Stevens, Washington, D. C. This paper was discussed by Drs. Alex J. Arieff and Harold C. Voris, Chicago, and Harold Stevens, Washington, D. C.

Dr. Harry Wilkins, Oklahoma City, read a paper entitled "Large Intracranial Calcified Lesions: A Clinical Evaluation of a Small Series of Cases," which was discussed by Drs. Keasely Welch, Detroit, Percival Bailey, Chicago, Gilbert Horrax, Boston, and Harry Wilkins, Oklahoma City.

A paper entitled "The Simulation of Degenerative Diseases of the Spinal Cord by Neoplasms of the Central Nervous System," was presented by Drs. H. R. Oberhill, Roger A. Smith, and Paul C. Bucy, Chicago, and was discussed by Drs. Benjamin Lichtenstein and Eric Oldberg, Chicago.

Wednesday, June 11—Morning

The following officers were elected: chairman, Dr. Francis M. Forster, Washington, D. C.; vice chairman, Dr. Harold C. Voris, Chicago; secretary, Dr. Karl O. Von Hagen, Los Angeles; representative to American Board of Psychiatry and Neurology, Frederick P. Moersch, Rochester, Minn., and representative to Scientific Exhibit: Dr. G. Wilse Robinson, Kansas City, Mo.

On motions duly made, seconded and carried, the section accepted the reports of the Secretary of the American Board of Psychiatry and Neurology and of the Secretary of the American Board of Neurology.

Dr. Frank H. Luton, Nashville, Tenn., presented the chairman's address, entitled "The Psychiatrist, His Obligations and Opportunities."

A paper entitled "Nondementing Psychoses in Older Individuals" was presented by Drs. John J. Madden, Joseph A. Luhan, Leo A. Kaplan, and Harold M. Manfredi, Chicago, and was discussed by Drs. Omar A. Kenyon Jr., Indianapolis, and Benjamin Boshes and John J. Madden, Chicago.

A paper entitled "Tension Headache," was presented by Drs. Arnold P. Friedman, Naomi de Sola Pool, and Theodore J. C. von Storch, New York, and was discussed by Drs. Frederick P. Moersch, Rochester, Minn., Francis J. Gerty, Chicago, and Theodore J. C. von Storch and Arnold P. Friedman, New York.

Drs. John M. McMahon, Bessemer, Ala., Russell R. Monroe, and Claude C. Craighead, New Orleans, presented a paper entitled "Emotional Factors in Scleroderma." This paper was discussed by Drs. Franz G. Alexander, Chicago, Ruben Nomland, Iowa City, and John M. McMahon, Bessemer, Ala.

Dr. Harry A. Wilmer, Menlo Park, Calif., read a paper entitled "Group Therapy in a County Tuberculosis Sanatorium," which was discussed by Drs. David Boyd Jr., Rochester, Minn., Russell Meadows Jr., Warren, Pa., Theodore J. C. von Storch, New York, and Harry A. Wilmer, Menlo Park, Calif.

A paper entitled "Psychiatric Symptoms Associated with Lesions of the Temporal Lobe," was presented by Drs. Donald W. Mulder and David Daly, Rochester, Minn., and was discussed by Drs. Frederick A. Gibbs, Chicago, L. B. Alford, St. Louis, and Donald W. Mulder, Rochester, Minn.

THURSDAY, JUNE 12—MORNING

A paper entitled "Evaluation of the Results of Treatment of Cerebral Infarcts (Strokes)," was presented by Drs. Clark H. Milikan, John S. Lundy, and Lucian A. Smith, Rochester, Minn. This paper was discussed by Drs. Roland P. Mackay, Chicago, Michael Scott and James E. Eckenhoff, Philadelphia, and Clark H. Milikan, Rochester, Minn.

Dr. Cary G. Suter, Charlottesville, Va., read a paper entitled "Anomic Aphasia: Its Differential Diagnosis and Cerebral Localization with a Study of Twenty Cases," which was discussed by Drs. Richard B. Richter, Chicago, and Cary G. Suter, Charlottesville, Va.

Dr. Henry W. Kumm, New York, read a paper entitled "Recent Acquisition to Our Knowledge About Poliomyelitis," which was discussed by Drs. Mabel G. Masten, Madison, Wis.; Hilary Koprowski, Pearl River, N. Y., Richard B. Richter, Chicago, Joseph A. Luhan, Chicago, Hans H. Reese, Madison, Wis., and Henry W. Kumm, New York.

Dr. Hans H. Reese, Madison, Wis., delegate, gave a report on the activities of the House of Delegates, which was accepted.

A paper entitled "Infectious Neuronitis: Present Concepts Concerning Etiology and Treatment," was presented by Drs. Karl O. Von Hagen and Robert N. Baker, Los Angeles, and was discussed by Drs. Ephraim Roseman, Louisville, Ky., Joseph A. Luhan, Chicago, Irving C. Sherman, Chicago, Karl O. Von Hagen, Los Angeles.

Drs. Guy H. Williams Jr., William A. Nosik, and John A. Hunter, Cleveland, presented a paper entitled "Convulsions As a Manifestation of Multiple Sclerosis," which was discussed by Drs. Benjamin Boshes, Chicago, and Guy H. Williams, Cleveland.

A paper entitled "Advances in the Control of Tremor," was presented by Drs. L. J. Doshay, K. C. Constable, and Stephen Fromer, New York, and was discussed by Drs. Henry von Witzleben, Chicago, and L. J. Doshay, New York.

SECTION ON OBSTETRICS AND GYNECOLOGY

TUESDAY, JUNE 10—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Louis H. Douglass, Baltimore.

Drs. Martin L. Stone and Alfred Tanz, New York, presented a paper on "Intravenous Administration of Posterior Pituitary Extract Before and During Labor," which was discussed by Dr. Nicholson J. Eastman, Baltimore.

Drs. James E. Eckenhoff, George L. Hoffman Jr., and Lonnie W. Funderburg, Philadelphia, presented a paper on "N-Allyl Normorphine: An Antagonist to Neonatal Narcosis Produced by Parturient Sedation," which was discussed by Dr. Edwin J. De Costa, Chicago.

Drs. Ernest W. Page and Emery P. Page, San Francisco, presented a paper on "Etiology and Treatment of Leg Cramps in Pregnancy," which was discussed by Dr. R. J. Miller, Harrisburg, Pa.

Drs. Charles S. Stevenson, Charles L. Schneider, and Robert G. Braden, Detroit, presented a paper on "Abruptio Placentae: Certain Concepts in Its Management." This paper was discussed by Drs. Michael J. Roach Jr., Memphis, Tenn., and J. P. Greenhill, Chicago.

Drs. John H. Moore and Frank A. Hill, Grand Forks, N. D., presented a paper on "The Postpartum Cervix," which was discussed by Dr. Charles J. Smith, Chicago.

Drs. Leon Krohn, Maurice S. Priver, and Milton H. Gotlib, presented a paper on "A New Etiologic Factor in Ectopic Pregnancy," which was discussed by Dr. Robert M. Campbell, Seattle.

WEDNESDAY, JUNE 11—AFTERNOON

The following officers were elected: chairman, Dr. Albert W. Holman, Portland, Ore.; vice chairman, Dr. Gordon W. Douglas, New York; secretary, Dr. Bernard J. Hanley, Los Angeles; delegate, Dr. Harvey B. Matthews, Brooklyn; alternate delegate, Dr. Daniel G. Morton, Los Angeles; representatives to American College of Surgeons, Drs. Alice F. Maxwell, San Francisco, Willard R. Cooke, Galveston, Texas, and Samuel A. Cosgrove, Jersey City, N. J.; representative to Subcommittee for State and Local Mortality and Morbidity, of the American Committee on Maternal Welfare, Dr. George H. Davis, Baltimore; representatives to American Committee on Maternal Welfare, Drs. William Benbow Thompson, Los Angeles, Robert D. Mussey, Rochester, Minn., and Carl Henry Davis, Miami, Fla.; and representative to Scientific Exhibit, Dr. Frederick H. Falls, Chicago.

Dr. Louis H. Douglass, Baltimore, read the chairman's address on "Soft Tissue Repairs."

Dr. William B. Norment, Greensboro, N. C., read a paper on "Uses of the Hysteroscope in Gynecological Diagnosis."

Dr. LeMon Clark, Oklahoma City, read a paper on "Exebiatric Gynecology," which was discussed by Dr. Nadina R. Kavinoky, Los Angeles.

Drs. Vincent P. Mazzola, N. J. Mazzola, Frances V. Mitchell, Henry L. Martone, and David Fettis, presented a paper on "Vaginal Hysterectomy for Uterine Prolapse: Report of 1,000 Cases," which was discussed by Drs. Virgil S. Counseller, Rochester, Minn., and Karl H. Martzloff, Portland, Ore.

Dr. James C. Doyle, Beverly Hills, Calif., read a paper on "Is This Hysterectomy Necessary?" This paper was discussed by Drs. Ralph E. Campbell, Madison, Wis., and William F. Mengert, Dallas, Texas.

Dr. George H. Davis, Baltimore, read a paper on "Maternal Mortality in Baltimore from 1936 Through 1950," which was discussed by Drs. John Whitridge Jr., Baltimore, and Charles Newberger, Chicago.

THURSDAY, JUNE 12—AFTERNOON

Drs. Duncan E. Reid, Mandel E. Cohen, and Eli Robins, Boston, presented a paper on "Excessive Surgery in Hysteria," which was discussed by Dr. Roland P. Mackay, Chicago.

Drs. Jacob Hoffman, David M. Farell, and George A. Hahn, Philadelphia, presented a paper on "A Review of 4,200 Biopsies of the Cervix with Relation to Carcinoma in Situ." This paper was discussed by Drs. Karl H. Martzloff, Portland, Ore., Carl Henry Davis, Miami, Fla., and H. E. Nieburgs, Augusta, Ga.

Dr. Keith P. Russell, Los Angeles, read a paper on "Changing Indications for Therapeutic Abortion: 20 Years' Experience at the Los Angeles County Hospital," which was discussed by Drs. H. Close Hesseltine, Chicago, R. W. Holmes, Charlottesville, Va., and J. P. Greenhill, Chicago.

Dr. Roy J. Heffernan and William A. Lynch, Brookline, Mass., presented a paper on "What Is the Status of Therapeutic Abortion in Modern Obstetrics?" This paper was discussed by Drs. J. H. Randall, Iowa City, and Herbert Ratner, Chicago.

Dr. Sherman S. Garrett, Champaign, Ill., read a paper on "Vitamins in the Etiology and Treatment of Eclamptic Toxemia," which was discussed by Dr. William J. Dieckmann, Chicago.

Drs. V. M. Bowers and D. N. Danforth, Evanston, Ill., presented a paper on "Significance of Poliomyelitis During Pregnancy: Analysis of the Literature, with 24 New Cases." This paper was discussed by Dr. V. M. Bowers, Evanston, Ill.

COMBINED MEETING OF SECTION ON OPHTHALMOLOGY WITH ASSOCIATION FOR RESEARCH IN OPHTHALMOLOGY

Association for Research in Ophthalmology

TUESDAY, JUNE 10—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. David G. Cogan, Boston.

Dr. Walter H. Fink, Minneapolis, read a paper entitled, "The Development of the Extrinsic Muscles of the Eye." This paper was discussed by Drs. Leon S. Stone, New Haven, Conn., L. V. Johnson, Cleveland, H. M. Burian, Iowa City, and David G. Cogan, Boston.

Dr. R. H. Monahan, Minneapolis, read a paper entitled, "Channels in the Crystalline Lens Capsule," which was discussed by Drs. Zacharias Dische, Conrad Berens, Ludwig von Sallmann, and M. A. Last, New York, Everett Kinsey, Detroit, and David G. Cogan, Boston.

Dr. Leon S. Stone, New Haven, Conn., read a paper entitled, "An Experimental Analysis of Lens Regeneration," which was discussed by Drs. H. M. Burian, Iowa City, John Bellows, Chicago, Lawrence R. Dame, Greenfield, Mass., Ludwig von Sallmann, New York, Clarence W. Rainey, Evanston, Ill., and Everett Kinsey, Detroit.

A paper entitled, "Reversal of the Lenticular Cation Shift Induced by Cold," was presented by Drs. John E. Harris, Leta B. Gehrsitz, and Loretta T. Nordquist, Portland, Ore., and was discussed by Drs. Jonas S. Friedenwald, Baltimore, Ludwig von Sallmann, New York, David Shoch, Chicago, and David G. Cogan, Boston.

Dr. E. A. Zeller, Chicago, read a paper entitled, "On the Catalase of Crystalline Lens," which was discussed by Drs. Everett Kinsey, Detroit, and David G. Cogan, Boston.

A paper entitled, "Nucleotides and Glutathione of the Capsule and Epithelium of the Lens Under Physiological and Abnormal Conditions," was presented by Drs. Zacharias Dische, Gabrielle Ehrlich, Carmen M. Munoz, and Ludwig von Sallmann, New York, and was discussed by Drs. Everett Kinsey, Detroit, John E. Harris, Portland, Ore., E. A. Zeller, Chicago, and David G. Cogan, Boston.

Dr. Roy O. Scholz, Baltimore, read a paper entitled, "Studies of the Physiology of the Eye Using Tracer Substances: Part 4. A Comparison of the Steady-State Ratio of Sodium Between the Plasma and Aqueous Humor in Normal Guinea Pigs."

WEDNESDAY, JUNE 11—MORNING

Dr. Samuel V. Abraham, Los Angeles, read a paper entitled, "The Use of Several New Products as Substitutes for Homatropine." This paper was discussed by Drs. Joseph Lebensohn, Chicago, Irving Leopold, Philadelphia, David G. Cogan, Boston, and Ludwig von Sallmann, New York.

Dr. John C. Locke, Montreal, Canada, read a paper entitled, "Studies in Antibiotic Antagonism and Synergism," which was discussed by Drs. Irving Leopold, Philadelphia, Samuel V. Abraham, Los Angeles, and James H. Allen, New Orleans.

A paper entitled, "Studies on the Effect of Nor-Adrenalin and Adrenalin on the Eye," was presented by Drs. Ludwig von Sallmann, M. P. Meyers, and B. Pillat, New York, and was discussed by Drs. David G. Cogan, Boston, Frank Newell, Chicago, M. A. Last, New York, and Charles K. Ascher, Cincinnati.

Dr. W. K. Noell, Randolph Field, Texas, read a paper entitled, "Experimentally Induced Toxic Effects on Structure and Function of Visual Cells and Pigment Epithelium," which was discussed by Drs. Ludwig von Sallmann, Zacharias Dische, New York, and Robb McDonald, Philadelphia.

A paper entitled, "Effect of Cortisone in Experimental Vaccinia Virus Keratoconjunctivitis of the Rabbit," was presented by Drs. S. J. Kimura, San Francisco, Hilda Geller, and Phillips Thygeson, San Jose, Calif., and was discussed by Drs. David G. Cogan, Boston, A. E. Braley, Iowa City, R. E. Thorp, Pittsburgh, and M. A. Last, New York.

A paper entitled, "Cortisone in Experimental Homologous Keratoplasty in the Rabbit," was presented by Drs. Gaylord Ojers, Jules Yasuna, and Harold G. Scheie, Philadelphia, and was discussed by Drs. Ludwig von Sallmann, New York, and Frank Newell, Chicago.

The following officers were elected: chairman, Brittain F. Payne, New York; secretary, James H. Allen, New Orleans; board of trustees, William F. Hughes, Chicago, William B. Clark, New Orleans, Robb McDonald, Philadelphia, T. E. Sanders, St. Louis, and Michael Hogan, San Francisco.

THURSDAY, JUNE 12—MORNING

A paper entitled, "The Nutrition of Corneal Regions in Experimental Animals: 2. The Corneal Transparency Problem and the Tonicity of Tears," was presented by Drs. Albert M. Potts and Mildred Orchen, Cleveland, and was discussed by Drs. David G. Cogan, Boston, and Ludwig von Sallmann, New York.

Dr. Elek Ludvigh, Detroit, read a paper entitled, "Direction Sense of the Eye," which was discussed by Drs. Hugo L. Bair, Rochester, Minn., H. L. Underwood, Vancouver, Wash., Kenneth Ogle, Rochester, Minn., and C. K. W. Ascher, Cincinnati.

Dr. John W. Patterson, Cleveland, read a paper entitled, "Cataracts Caused by Carbohydrates." This paper was discussed by Drs. David Shoch, Chicago, James H. Allen, New Orleans, David G. Cogan, Boston, and Zacharias Dische, New York.

Dr. Raymond C. Collins, East Orange, N. J., read a paper entitled, "Further Experimental Studies on Sympathetic Ophthalmia," which was discussed by Drs. David G. Cogan, Boston, T. E. Sanders, St. Louis, Loren P. Guy, New York, and Richey L. Waugh Jr., New Orleans.

A paper entitled, "Metabolism of Fluid Tissue Cultures Used for Virus Studies," was presented by Drs. A. E. Braley and R. C. Alexander, Iowa City, and was discussed by Drs. David G. Cogan, Boston, Everett Kinsey, Detroit, and James H. Allen, New Orleans.

A paper entitled, "Experimental Study of Plastic Material as a Substitute for Opaque Corneas," was read by Dr. William A. Stone, Boston, and was discussed by Drs. David G. Cogan, Boston, and Conrad Berens, New York.

Section on Ophthalmology

TUESDAY, JUNE 10—AFTERNOON

The meeting was called to order at 2 o'clock by the chairman, Dr. Edwin B. Dunphy, Boston, who read the chairman's address.

Dr. Arthur J. Bedell, Albany, N. Y., read a paper entitled "The Clinical Significance of Some Congenital Changes in the Optic Disc," which was discussed by Dr. Frank B. Walsh, Baltimore.

A paper entitled, "Clinico-Pathology of Ocular Foreign Bodies," was presented by Drs. Bernard A. Roberts, Abraham Schlossman, and Edgar B. Burchell, New York, and was discussed by Drs. Helenor C. Wilder, Washington, D. C., and H. E. Thorpe, Pittsburgh.

Dr. Frederick H. Theodore, New York, read a paper entitled, "Drug Sensitivities and Irritations of the Conjunctiva," which was discussed by Drs. Albert N. Lemoine, Kansas City, Mo., and James H. Allen, New Orleans.

Dr. James M. O'Brien, Bridgeport, Conn., read a paper entitled, "Retinitis Pigmentosa." This paper was discussed by Drs. Francis H. Adler, Philadelphia, and Hermann M. Burian, Iowa City.

Dr. Roderic O'Connor, Oakland, Calif., read a paper entitled, "Surgery of the Vertical Phorias," which was discussed by Dr. Francis H. Adler, Philadelphia.

Dr. Loren P. Guy, New York, read a paper entitled, "Retrolental Fibroplasia: A Clinical Report," which was discussed by Drs. Thaddeus Szewczyk, East St. Louis, Ill., and Frederick C. Blodi, New York.

A paper entitled, "The Visual Fields, the Discs and Their Fate in Pituitary Tumors," was presented by Drs. Oscar Hirsch, Boston, and Hannibal Hamlin, Providence, R. I., and was discussed by Drs. Gilbert Horrax, Boston, and Arthur J. Bedell, Albany, N. Y.

Wednesday, June 11—Afternoon

The following officers were elected: chairman, Dr. Francis H. Adler, Philadelphia; vice chairman, Dr. Frederick A. Davis, Madison, Wis.; secretary, Dr. Trygve Gundersen, Boston; and assistant secretary, Dr. Harold G. Scheie, Philadelphia. Dr. Robert J. Masters, Indianapolis, was appointed as chairman of the executive committee.

The following reports were read and accepted: American Committee on Optics and Visual Physiology; Committee on American Board of Ophthalmology; Committee on National Museum of Ophthalmic Pathology; Committee on Scientific Exhibits; Committee on Museum of Ophthalmic History; Committee on Standard Nomenclature; Committee on the American Orthoptic Council; Joint Committee on Industrial Ophthalmology; Board of Governors; 37th Clinical Conference, American College of Surgeons; Governors' Meeting, American College of Surgeons; Joint Committee on Study of Retrolental Fibroplasia; Committee on the Knapp Testimonial Fund; Committee on the Lucian Howe Fund; Committee of One re Membership in International Federation of Ophthalmologic Societies; Delegate to American Medical Association House of Delegates; Committee on Award of the Knapp Medal; and the Executive Committee.

Dr. Arthur J. Bedell, Albany, N. Y., received the Prize Award in Ophthalmology.

Dr. L. S. Stone, New Haven, Conn., read a paper entitled, "Normal and Reversed Vision in Transplanted Eyes," which was discussed by Dr. Hermann M. Burian, Iowa City.

Dr. Giambattista Bietti, Pavia, Italy, invited foreign guest, presented an address.

Dr. Hermann M. Burian, Iowa City, read a paper entitled, "Electroretinography and Its Clinical Application," which was discussed by Dr. Francis H. Adler, Philadelphia.

Dr. Charles K. W. Ascher, Cincinnati, read a paper entitled, "Aqueous Veins, Their Status 11 Years After Their Detection." This paper was discussed by Dr. Harold G. Scheie, Philadelphia.

Dr. Paul W. Miles, St. Louis, read a paper entitled, "Depth of Focus and Amplitude of Accommodation Through Trifocal Glasses," which was discussed by Dr. Edwin F. Tait, Norristown, Pa.

Thursday, June 12—Afternoon

Dr. Holger Ehlers, Copenhagen, Denmark, invited foreign guest, read a paper entitled, "Clinical Testing of the Visual Acuity."

A paper entitled, "Clinical and Experimental Studies in Hydrocortisone (Compound F) in Ophthalmology," was presented by Drs. P. Robb McDonald, Irving H. Leopold, and Robert D. Mulberger, Philadelphia, and A. W. Vogel, Ardmore, Pa., and was discussed by Dr. Frank W. Newell, Chicago.

A paper entitled, "The Present Status of Corticotropin, Cortisone and Compound F in Ophthalmology," was presented by Drs. Dan M. Gordon, John M. McLean, and Herbert Koteen, New York. This paper was discussed by Drs. James A. Olson, Detroit, and Lester E. Johnson, Wichita, Kan.

A paper entitled, "Idiopathic Retinal Detachments: An Analysis of Results," was presented by Drs. Taylor R. Smith, Boston, and L. Harrell Pierce, Baltimore, and was discussed by Drs. Peter C. Kronfeld, Chicago, and H. E. Thorpe, Pittsburgh.

A paper entitled, "Curare and Local Anesthesia," was presented by Drs. Daniel B. Kirby and Paluel J. Flagg, New York, and was discussed by Drs. Henry K. Beecher, Boston, Conrad Berens, New York, and James H. Allen, New Orleans.

Dr. William Stone Jr., Brookline, Mass., read a paper entitled, "The Use of Lid Sutures in Cataract Surgery and Presentation of a New Technique." This paper was discussed by Dr. Conrad Berens, New York.

Dr. Alfred Uihlein, Rochester, Minn., read a paper entitled, "Anterior Clinoid Meningiomas: A Cause of Unilateral Loss of Vision," which was discussed by Dr. Richard B. Pippitt, Boston.

SECTION ON ORTHOPEDIC SURGERY

Tuesday, June 10—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Frederic C. Bost, San Francisco.

Dr. R. W. Newman, Iowa City, read a paper on, "Recurring Dislocation of the Shoulder: Operative Treatment, Pertinent Anatomic, Functional and Pathologic Features," which was discussed by Drs. George L. Dixon, Tucson, Ariz., and Carlo S. Scuderi, Chicago.

A paper prepared by Dr. Pio Blanco, Buffalo, on "Synovectomy of the Knee Joint: Indications and End Results: A Preliminary Report," was presented, and it was discussed by Drs. Clinton L. Compere and William A. Larmon, Chicago, and J. Albert Key, St. Louis.

Drs. William H. Bickel, Rochester, Minn., Robert F. Kimbrough, Fort Wayne, Ind., and David C. Dahlin, Rochester, Minn., presented a paper on "Tuberculous Tenosynovitis." This paper was discussed by Drs. Frederick R. Thompson, New York, Harvey S. Allen, Chicago, and J. Albert Key, St. Louis.

Dr. David M. Bosworth, New York, Alphonso Della Pietra, Hartford, Conn., and George Rahilly, Fort Lauderdale, Fla., presented a paper on, "Paraplegia Resulting from Tuberculosis of the Spine," which was discussed by Drs. Ignacio V. Ponseti, Iowa City, and Robert O. Ritter, Chicago.

Dr. James W. Miller, Seattle, read a paper on, "The Conservative and Prophylactic Surgical Management of Foot Lesions in the Diabetic." This paper was discussed by Drs. Donald C. Conzett, Dubuque, Iowa, and Jerome G. Finder, Chicago.

Drs. Frank D. Dickson, Rex L. Diveley, and Richard H. Kiene, Kansas City, Mo., presented a paper on, "The Treatment of Subacute and Chronic Osteomyelitis with the Use of Antibiotics and Primary Closure," which was discussed by Drs. Theodore H. Vinke, Cincinnati, Earl S. Leimbacher, Joliet, Ill., and Rex. L. Diveley, Kansas City, Mo.

WEDNESDAY, JUNE 11—AFTERNOON

Dr. H. Relton McCarroll, St. Louis, vice chairman, reported for the delegate to the House of Delegates.

The following officers were elected: chairman, Dr. H. Relton McCarroll, St. Louis; vice chairman, Dr. Charles N. Pease, Chicago; secretary, Dr. Frederick R. Thompson, New York; representative to Scientific Exhibit, Dr. J. Vernon Luck, Los Angeles; delegate, Dr. Edward L. Compere, Chicago; alternate delegate, Dr. I. S. McReynolds, Houston, Texas; representatives to American Board of Orthopedic Surgery, Drs. Hugh M. A. Smith Jr., Memphis, Tenn., and G. W. N. Eggers, Galveston, Texas.

Dr. L. Stanley Sell, Idaho Falls, Idaho, read a paper on, "Misdiagnosis and Mismanagement of Early Intervertebral Disc Lesions."

Dr. Frank L. Shipp, Boston, read a paper on, "Myelography: Use or Abuse."

The papers of Drs. Sell and Shipp were discussed by Drs. Loyal Davis, Chicago, J. Albert Key, St. Louis, and Reed S. Clegg, Salt Lake City.

Dr. Frederic C. Bost, San Francisco, read the chairman's address, "The Physician and the Services for the Care of the Crippled Child."

A paper prepared by Drs. C. Fred Ferciot and Frederick S. Webster, Lincoln, Neb., on, "Calcaneovalgus Foot in the Newborn and Its Relation to Developmental Flat Foot," was presented and was discussed by Drs. Walter P. Blount, Milwaukee, and Albert L. Bershon, Toledo, Ohio.

Dr. James B. Weaver, Kansas City, Kan., read a paper on, "Hemangiomata in Orthopedic Surgery," which was discussed by Dr. Robert D. Moore, Kankakee, Ill.

THURSDAY, JUNE 12—AFTERNOON

Dr. Arthur A. Michele, Brooklyn, read a paper on, "Trigger-Point Scapulocostal Syndrome." This paper was discussed by Drs. Ruth Jackson, Dallas, Texas, and Jesse B. Griffith, Pittsburgh.

Drs. Robert B. Portis, and Howard A. Mendelsohn, Beverly Hills, Calif., presented a paper on, "The Conservative Management of Fractures of the Ankle Involving the Medial Malleolus," which was discussed by Drs. Fred L. Stuttle, Peoria, Ill., and Milton S. Thompson, San Antonio, Texas.

Drs. Robert H. Ramsey and H. Relton McCarroll presented a paper on "The Problem of the Muscular Dystrophies," which was discussed by Drs. Howard A. Swart, Charleston, W. Va., and George L. Dixon, Tucson, Ariz.

Dr. Marcus J. Stewart, Memphis, Tenn., read a paper on, "Fracture of the Carpal Scaphoid." This paper was discussed by Drs. F. W. Carruthers, Little Rock, Ark., and Newton C. Mead, Evanston, Ill.

Dr. R. C. Robertson, Chattanooga, Tenn., read a paper on, "Intramedullary Fixation of Fractures of the Forearm: Evaluation of 20 Successive Unselected Cases."

Drs. J. E. M. Thomson, Duane A. Willander, and Edward S. Maxim, Lincoln, Neb., presented a paper on, "The Treatment of Certain Fractures of the Forearm with Kuntscher Nail."

These two papers were discussed by Drs. Dana M. Street, Memphis, Tenn., Bruce Brewer, Milwaukee, and J. E. M. Thomson, Lincoln, Neb.

SECTION ON PATHOLOGY AND PHYSIOLOGY

TUESDAY, JUNE 10—AFTERNOON

The meeting was called to order at 2:05 p. m., by the chairman, Dr. Paul R. Cannon, Chicago.

Dr. Harry J. Corper, Denver, presented a paper on, "An Analysis of the Value of Chemotherapeutic Agents in the Treatment of Tuberculosis," which was discussed by Drs. Willard Van Hazel, Chicago, and Earle M. Chapman, Boston.

Dr. J. Earl Thomas, Philadelphia, read a paper on, "The Normal and Pathological Physiology of the External Pancreatic Secretion," which was discussed by Drs. M. I. Grossman, Chicago, and Earle M. Chapman, Boston.

A paper entitled, "The Present Status of Blood Substitutes," was presented by Drs. Frank W. Hartman and Vivian G. Behrmann, Detroit, and was discussed by Dr. Clyde G. Culbertson, Indianapolis, Col. William H. Anspacher, Fort Sam Houston, Texas, and Drs. John Scudder, New York, Curtis P. Artz, Fort Sam Houston, Texas, and F. D. Lawrason, Washington, D. C.

Dr. Roger D. Baker, Birmingham, Ala., read a paper on, "Fungus Infections: 1. Resectable Mycotic Lesions; 2. Acutely Fatal Mycoses," which was discussed by Drs. Duane Carr, Memphis, Tenn., and Edwin F. Hirsch, Chicago.

A paper entitled, "Cortisone in the Treatment of Experimentally Produced Myocardial Infarcts in Dogs," was presented by Drs. Aran S. Johnson, Schayel R. Scheinberg, Robert A. Gerisch and Harry C. Saltzstein, Detroit, and was discussed by Dr. Louis N. Katz, Chicago.

WEDNESDAY, JUNE 11—AFTERNOON

Dr. Paul R. Cannon, Chicago, presented the chairman's address on, "Problems of Parenteral Alimentation."

The following officers were elected: chairman, Dr. L. G. Montgomery, Muncie, Ind.; vice chairman, Dr. J. Earl Thomas, Philadelphia; secretary, Dr. Edwin F. Hirsch, Chicago; delegate, Dr. M. G. Westmoreland, Chicago; alternate delegate, Dr. H. J. Corper, Denver; representative to Scientific Exhibit, Dr. Frank B. Queen, Portland, Ore.; representatives to American Board of Pathology, Drs. Israel Davidsohn, Chicago, and James Kernohan, Rochester, Minn.

Dr. Clayton G. Loosli, Chicago, read a paper on, "Some Epidemiological Aspects of Pulmonary Histoplasmosis," which was discussed by Drs. M. L. Furcolow, Kansas City, Kan., and Frank B. Queen, Portland, Ore.

A paper entitled, "Tests of Pulmonary Function Using Recording Oximeters," was presented by Drs. John F. Perkins Jr., William E. Adams, and Adolfo Flores, Chicago, and was discussed by Dr. William M. Lees, Chicago.

Dr. Paul E. Steiner, Chicago, read a paper on, "Human Significance of Experimental Carcinogenesis," which was discussed by Drs. Stanley P. Reimann, Philadelphia, William B. Wartman, Chicago, and Harry Bergman, New York.

Dr. Cecil A. Krakower, Chicago, presented a paper on, "Experimental Glomerulonephritis," which was discussed by Drs. Granville A. Bennett and J. P. Simonds, Chicago.

THURSDAY, JUNE 12—MORNING

A joint meeting was held with the Section on Gastro-Enterology and Proctology. The proceedings are reported in the minutes of that section.

SECTION ON PEDIATRICS

TUESDAY, JUNE 10—MORNING

The meeting was called to order at 9 o'clock by the chairman, Dr. Walter B. Stewart, Atlantic City, N. J.

The following papers were read as a symposium on the "Present Status of Corticotropin, Cortisone, and Allied Substances in Pediatric Practice":

Dr. Edward W. Boland, Los Angeles: "Practical Considerations in the Clinical Application of Cortisone, Hydrocortisone (Compound F), and Corticotropin (ACTH)."

Dr. Joseph J. Bunim, New York: "Corticotropin and Cortisone in the Treatment of Rheumatic Fever and Rheumatoid Arthritis in Children."

Dr. William B. Sherman, New York: "Corticotropin (ACTH) and Cortisone in the Treatment of Asthma and Eczema."

Dr. Conrad M. Riley, New York: "Corticotropin and Cortisone in the Management of the Nephrotic Syndrome in Children."

Drs. J. M. Stickney and S. D. Mills, Rochester, Minn.: "Corticotropin and Cortisone in the Management of Diseases of the Blood in Children."

Drs. Lawrance W. Kinsell and John W. Partridge, Oakland, Calif.: "The Use of Corticotropin and Cortisone in Shock, Burns, and Overwhelming Infection."

These papers were discussed by Drs. Edward W. Boland, Los Angeles, Eric Reiss, Philadelphia, Conrad M. Riley, and Joseph J. Bunim, New York, and Laurance W. Kinsell, Oakland, Calif.

WEDNESDAY, JUNE 11—MORNING

The following officers were elected: chairman, Dr. Eugene T. McEnery, Chicago; vice-chairman, Dr. Oliver L. Stringfield, Stamford, Conn.; secretary, Dr. Wyman C. C. Cole, Detroit; delegate, Dr. Woodruff L. Crawford, Rockford, Ill.; alternate delegate, Dr. Oliver L. Stringfield, Stamford, Conn.; custodian of the Jacoby Fund, Dr. Hugh L. Dwyer, Kansas City, Mo.; representative to Scientific Exhibit, Dr. F. Thomas Mitchell, Memphis, Tenn.; and representative to International Congress of Pediatrics, Dr. Margaret Mary Nicholson, Washington, D. C.

Dr. Walter B. Stewart, Atlantic City, read the chairman's address on, "The Pediatrician Takes Stock."

Dr. T. S. Szewczyk, East St. Louis, Ill., read a paper on, "Prophylaxis of Retrolental Fibroplasia by Oxygen Administration," which was discussed by Drs. T. E. Sanders, St. Louis, Heyworth N. Sanford, Chicago, and A. D. Ruedemann and Everett Kinsey, Detroit.

Dr. H. M. Slater, Montreal, read a paper on, "Resuscitation in Infants and Children," which was discussed by Dr. Mary Lou White, New Haven, Conn.

Drs. Harry R. Litchfield, Richard Turin, and Jacob Halperin, Brooklyn, presented a paper on, "Fetal Mortalities in Cesarean Sections," which was discussed by Drs. Edith Potter and Benjamin M. Kagan, Chicago.

Dr. George R. Krupp, Rockville Centre, N. Y., and Arnold P. Friedman, New York, presented a paper on, "Migraine in Children." This paper was discussed by Dr. Samuel Livingston, Baltimore.

THURSDAY, JUNE 12—MORNING

Joint Meeting with Section on Laryngology, Otology and Rhinology

Dr. Alden H. Miller, Los Angeles, read a paper on, "Incidence of Poliomyelitis in Tonsillectomized Patients."

Dr. James L. Wilson, Ann Arbor, Mich., read a paper on "Relationship of Tonsillectomy to Acute Bulbar Poliomyelitis."

Dr. Tom C. Galloway, Evanston, Ill., read a paper on "Danger of Ear, Nose, Throat and Other Operations in the Poliomyelitis Season."

Dr. Franklin H. Top, Minneapolis, read a paper on "The Occurrence of Poliomyelitis by Clinical Type Following Tonsillectomy in Persons at Various Time Intervals of Life."

Questions were answered by the essayists, and there was discussion by Drs. J. Milton Robb, Detroit, and George J. Boines, Wilmington, Del.

SECTION ON PHYSICAL MEDICINE AND REHABILITATION

TUESDAY, JUNE 10—AFTERNOON

The meeting was called to order at 2:05 p. m., by the vice chairman, Dr. Kristian G. Hansson, New York. The meeting was presided over after the reading of the first paper by the chairman, Dr. Howard A. Rusk, New York.

Dr. Ralph E. DeForest, Chicago, read a paper on, "The Council on Physical Medicine and Rehabilitation," which was discussed by Drs. Frank H. Krusen, Rochester, Minn., and Ralph E. DeForest.

Dr. Allen S. Russek, New York, read a paper on, "Scapulocostal Syndrome: The Pathology, Diagnosis and Treatment." This paper was discussed by Drs. Kristian G. Hansson and Allen S. Russek, New York.

Dr. Michael M. Dacso, New York, read a paper on, "Clinical Aspects of Geriatric Rehabilitation," which was discussed by Drs. Walter M. Solomon, Cleveland, and Leo Dobrin and Michael M. Dacso, New York.

Dr. O. Leonard Huddleston, Santa Monica, Calif., read a paper on, "What the Clinician Should Know About Electromyography," which was discussed by Drs. Arthur L. Watkins, Boston, and Howard A. Rusk, New York.

A paper on, "Cortisone in the Treatment of the Hemiplegic," was presented by Drs. Henry I. Russek, Staten Island, N. Y., Joseph G. Benton and Lee Greene, New York, and Burton L. Zohman, Brooklyn, and was discussed by Drs. S. M. Dorinson, San Francisco, Howard A. Rusk, New York, M. J. Glick, Miami Beach, Fla., and Joseph G. Benton, New York.

WEDNESDAY, JUNE 11—AFTERNOON

The following officers were elected: chairman, Dr. Kristian G. Hansson, New York; vice chairman, Dr. Walter M. Solomon, Cleveland; delegate, Dr. Frank H. Krusen, Rochester, Minn.; alternate delegate, Dr. Harold Dinken, Denver.

Dr. Howard A. Rusk, New York, read the chairman's address entitled, "Rehabilitation Pays Dividends."

Dr. George G. Deaver, New York, was the moderator of a symposium on cerebral palsy, which included the following speakers and subjects:

Dr. Meyer A. Perlstein, Chicago, read a paper on, "Differential Diagnostic Hints in Cerebral Palsy."

Dr. Harry E. Barnett, Chicago, read a paper on, "Surgical Procedures in Cerebral Palsy."

Dr. Harold Westlake, Evanston, Ill., read a paper on, "Speech Development in Cerebral Palsy."

THURSDAY, JUNE 12—MORNING

A joint meeting was held with the Section on General Practice. The proceedings are reported in the minutes of that section.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

Tuesday, June 10—Morning

A joint meeting was held with the Section on Military Medicine and the Section on Radiology. The proceedings are reported in the minutes of the Section on Military Medicine.

Wednesday, June 11—Afternoon

The meeting was called to order at 2 o'clock by the chairman, Dr. Carey P. McCord, Ann Arbor, Mich.

The following officers were elected: chairman, Dr. Vlado A. Getting, Boston; vice chairman, Dr. Jean S. Felton, Oak Ridge, Tenn.; secretary, Dr. Frank Princi, Cincinnati; delegate for two years, Dr. Rutherford T. Johnstone, Los Angeles; alternate delegate for two years, Dr. Roy L. Cleere, Denver; representative to Scientific Exhibit, Dr. Paul A. Davis, Akron, Ohio.

Dr. Carey P. McCord, Ann Arbor, Mich., read the chairman's address entitled, "The Acceptance of Industrial Medicine and Public Health Within the Medical Profession."

Dr. Katharine Williams, Harwell, England, read a paper on, "Some Aspects of Preventive Medicine in an Atomic Energy Establishment," which was discussed by Dr. R. J. Hasterlik, Chicago.

Dr. H. D. Storms, Santurce, Puerto Rico, read a paper on, "Rehabilitation in Puerto Rico," which was discussed by Dr. Josephine J. Buchanan, Washington, D. C.

Dr. Sven Forssman, Stockholm, Sweden, read a paper on, "Industrial Medicine in Sweden: Recent Experiences and Future Problems," which was discussed by Dr. A. J. Lanza, New York.

Dr. H. Graham Ross, Montreal, Canada, read a paper on, "Industrial Medicine in Canada." This paper was discussed by Dr. Clarence D. Selby, Ann Arbor, Mich.

Drs. Milton I. Roemer, Geneva, Switzerland, and Oswaldo L. da Costa, Washington, D. C., presented a paper on, "Occupational Health Activities of the World Health Organization."

Dr. R. E. W. Fisher, London, England, read a paper on, "Occupational Skin Cancer in Tar Workers: Report of a Survey." This paper was discussed by Drs. Leonard F. Weber, Chicago, and Oscar A. Sander, Milwaukee.

Thursday, June 12—Afternoon

Dr. Russell M. Wilder, Bethesda, Md., read a paper on, "Arthritis as a Public Health Problem," which was discussed by Dr. E. F. Rosenberg, Chicago.

Dr. Bruno Gebhard, Cleveland, read a paper on, "Patient Education Through the Cleveland Health Museum: A 12 Year Review," which was discussed by Dr. Robert M. Stecher, Cleveland.

Dr. Walter Finke, Rochester, N. Y., read a paper on, "Public Health Aspects and Prevention of Bronchopulmonary Disease." This paper was discussed by Dr. Huston K. Spangler, Washington, D. C.

Dr. Robert M. Foote, Nashville, Tenn., read a paper on, "Public Health Aspects of the Speech and Hearing Problems." This paper was discussed by Drs. G. E. Shambaugh, Francis L. Lederer, and Edward Press, Chicago.

Dr. Jack C. Haldeman, Washington, D. C., presented a paper prepared by himself and Dr. J. W. Mountin, deceased, on, "State Health Organization Today and a Decade Ago." This paper was discussed by Dr. John C. Ayres, Boston.

Dr. William T. Doran Jr., Baltimore, presented a paper on, "The Adaptation of Public Health Techniques to Industrial Medicine," which was discussed by Dr. John Phair, Cincinnati.

SECTION ON RADIOLOGY

Tuesday, June 10—Morning

A joint meeting was held with the Section on Military Medicine and the Section on Preventive and Industrial Medicine and Public Health. The proceedings are reported in the minutes of the Section on Military Medicine.

Wednesday, June 11—Morning

The meeting was called to order at 9:10 a. m., by the chairman, Dr. Ira H. Lockwood, Kansas City, Mo.

The following officers were elected: chairman, Dr. Paul C. Hodges, Chicago; vice chairman, Dr. Kenneth D. A. Allen, Denver; secretary, Dr. Traian Luecutia, Detroit; delegate for two years; Dr. B. R. Kirklin, Rochester, Minn.; alternate delegate, Dr. Eugene P. Pendergrass, Philadelphia; representative to Scientific Exhibit, Dr. Richard H. Chamberlain, Philadelphia; and delegate to American Board of Radiology for six years, Dr. Leo G. Rigler, Minneapolis.

Dr. Ira H. Lockwood, Kansas City, Mo., presented the chairman's address, "Lymphosarcoma of the Gastrointestinal Tract."

A symposium on roentgen examination of the gallbladder and jaundice included the following topics.

A paper on "Roentgen Examination of the Gallbladder Without Opacification," was presented by Dr. Clyde A. Stevenson, Temple, Texas.

Drs. B. R. Kirklin and D. B. O'Donnell, Rochester, Minn., presented a paper on, "Present Day Cholecystography."

Drs. Raymond C. Beeler and John W. Beeler, Indianapolis, presented a paper on, "Barium Study as an Aid in the Differential Diagnosis of Jaundice."

A paper on "Preoperative and Postoperative Cholangiography," was presented by Drs. Everett L. Pirkey, Lawrence A. Davis, and Lawrence A. Pilla, Louisville.

Drs. Russell H. Morgan, Mark Ravitch, and Ralph E. Sturm, Baltimore, presented a paper on, "The Reduction of Intussusception by Barium Enema."

The papers presented in the symposium were discussed by Drs. Edward L. Jenkinson, Chicago, Bruce C. Lockwood, Detroit, Arthur H. Joistad Jr., Muskegon, Mich., James C. Drye, Louisville, Ky., Fred J. Hodges, Ann Arbor, Mich., Samuel Brown, Cincinnati, and S. F. Thomas, Palo Alto, Calif.

Thursday, June 12—Morning

The meeting was called to order at 9:15 a. m. by the newly elected chairman, Dr. Paul C. Hodges, Chicago.

Dr. Franz J. Buschke, Seattle, presented a paper on, "The Role of Common Sense in Cancer Therapy," which was discussed by Dr. Erich M. Uhlmann, Chicago.

Dr. Lee A. Hadley, Syracuse, N. Y., presented a paper on, "Spondylolisthesis Studies," which was discussed by Dr. Maurice B. Roche, St. Louis.

Drs. Hirsch Marks, New York, and George Rudinger, Buffalo, presented a paper on, "Roentgen Therapy of Advanced Carcinoma with the Use of Grid: Comparative Results with Other Methods: Some Considerations of the Physical Factors in Grid Therapy." This paper was discussed by Dr. Theodore J. Wachowski, Wheaton, Ill.

A paper entitled, "A Method for Measuring Cardiac and Peripheral Vascular Flow Utilizing Serum Albumin Labelled with Radioactive Iodine," was presented by Drs. H. L. Friedell, W. J. MacIntyre, W. D. Holden, and W. H. Pritchard, Cleveland.

Dr. Robert J. Moon, Chicago, presented a paper on, "The Present Status of the Scanning X-Ray System."

Drs. Lawrence Reynolds, K. E. Corrigan, and H. S. Hayden, Detroit, presented a paper on, "Detection of Concealed Thyroid Disease by Tracer Technic."

Drs. Dwight E. Clark, James Rule, and David A. Cofrin, Chicago, presented a paper entitled, "A Five Year Experience with Radioactive Iodine in the Treatment of Hyperthyroidism."

These four papers were discussed by Drs. Louis N. Katz and Paul C. Hodges, Chicago, Z. S. Gierlach, Louisville, Ky., Wendell G. Scott, St. Louis, and Harry Bergman, New York.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

Tuesday, June 10—Morning

The meeting was called to order at 9 o'clock by the chairman, Dr. I. Mims Gage, New Orleans.

Drs. James W. Hendrick, San Antonio, Texas, and Grant E. Ward, Baltimore, presented a paper on "Treatment of Intraoral Malignancy," which was discussed by Drs. Danely P. Slaughter, Chicago, John B. Erick, Rochester, Minn., and Walter W. Carroll, Chicago.

Drs. Michael E. DeBakey, John Heaney, and Oscar Creech, Houston, Texas, presented a paper on, "Surgical Considerations of Diverticula of the Esophagus." This paper was discussed by Drs. Frank H. Lahey, Boston, and Stuart W. Harrington, Rochester, Minn.

Dr. Richard H. Sweet, Boston, read a paper on "The Diagnosis and Treatment of Hiatus Hernia of the Diaphragm," which was discussed by Drs. William P. Chapman, Boston, and Conrad R. Lam, Detroit.

Dr. Alfred Blalock, Baltimore, read a paper on "William Stewart Halsted: An Appreciation on the Centenary of His Birth." This paper was discussed by Drs. Emile F. Holman, San Francisco, and James F. Mitchell, Washington, D. C.

Dr. Charles F. Hobelmann, Baltimore, read a paper on "Spinal Anesthesia for Abdominal Surgery," which was discussed by Drs. George S. Hopkins, Topeka, Kan., and James E. Eckenhoff, Philadelphia.

Dr. Charles D. Branch, Peoria, Ill., read a paper on "Inflammatory Lesion of the Colon Simulating Neoplasms," which was discussed by Drs. B. M. Black, Rochester, Minn., and Richard K. Gilchrist, Chicago.

Wednesday, June 11—Morning

The following officers were elected: chairman, Dr. I. Ridgeway Trimble, Baltimore; vice chairman, Dr. Frank L. A. Gerbode, San Francisco; secretary, Dr. Walter G. Maddock, Chicago; representative to Scientific Exhibit, Dr. John H. Mulholland, New York; representatives to American Board of Surgery, Drs. Gustaf E. Lindskog, New Haven, Conn., and James D. Rives, New Orleans; representative to American Board of Neurosurgery, Dr. Eldridge H. Campbell, Albany, N. Y.

Dr. I. Mims Gage, New Orleans, read the chairman's address on "The Hidden Thrombus of Fatal Pulmonary Embolism."

Drs. William F. Rienhoff Jr. and Alan C. Woods Jr., Baltimore, presented a paper on "Ligation of the Primary Hepatic Splenic and Left Gastric Arteries in the Treatment of Intrahepatic Portal Hypertension."

Dr. Nicholas A. Michels, Philadelphia, read a paper on "The Hepatic, Cystic, and Retroduodenal Arteries and Their Relations to the Biliary Ducts."

These two papers were discussed by Drs. Philip Thorek, Chicago, Arthur H. Blakemore, New York, Michael E. DeBakey, Houston, Texas, Warren H. Cole, Chicago, Robert R. Linton, Brookline, Mass., I. S. Ravdin, Philadelphia, and James W. Hendrick, San Antonio, Texas.

Dr. Gerald H. Pratt, New York, read a paper on "Surgical Correction of Lymphedema," which was discussed by Drs. Emile F. Holman, San Francisco, Harris B. Shumacker Jr., Indianapolis, and Alton Ochsner, New Orleans.

Dr. Jere W. Lord Jr., New York, read a paper on "The Surgical Management of the Shoulder Girdle Syndromes, Hyperabduction, Costoclavicular, Cervical Rib, and Scalenus Anticus: A New Operative Procedure." This paper was discussed by Drs. J. Ross Veai, Washington, D. C., and Harris B. Shumacker Jr., Indianapolis.

Thursday, June 12—Morning

Drs. James T. Priestley, Randall G. Sprague, and Walter F. Kvale, Rochester, Minn., presented a paper on "Surgical Lesions of the Adrenal Glands," which was discussed by Drs. Charles B. Huggins and Richard L. Landau, Chicago.

Drs. Leonard J. Druckerman, Vernon A. Weinstein, Percy Klingenstein and Ralph Colp, New York, read a paper on "Duodenal Ulcer Treated by Subtotal Gastrectomy With and Without Vagotomy." This paper was discussed by Drs. Karl A. Meyer, Chicago, and Reginald H. Smithwick, Boston.

Drs. Henry N. Harkins, Ralph Schlosser, Horace G. Moore, J. K. Stevenson, E. H. Storer, Lester R. Sauvage, E. J. Schmitz, Edmund A. Kanar, and H. H. Olson, Seattle, presented a paper on "The Billroth 1 and 2 Methods of Subtotal Gastrectomy for Duodenal Ulcer: A Clinical and Experimental Evaluation." This paper was discussed by Drs. Alfred A. Strauss, Chicago, John M. Waugh, Rochester, Minn., Jerry Zaslow, Philadelphia, M. E. Steinberg, Portland, Ore., I. S. Ravdin, Philadelphia, and Paul Kiernan, Washington, D. C.

Drs. L. Kraeer Ferguson and Donald R. Cooper, Philadelphia, presented a paper on "Gastric Resection in the Treatment of Upper Gastro-Intestinal Hemorrhage of Undetermined Etiology." This paper was discussed by Drs. I. Ridgeway Trimble, Baltimore, Frank H. Lahey, Boston, and M. E. Steinberg, Portland, Ore.

Dr. William A. Cooper and George N. Papanicolaou, New York, presented a paper on "The Balloon Technique in the Cytologic Diagnosis of Gastric Cancer," which was discussed by Drs. Walter G. Maddock and Elizabeth A. McGrew, Chicago.

Dr. Frederick F. Boyce, New Orleans, read a paper on "Carcinoma of the Stomach in a Large General Hospital," which was discussed by Drs. Champ Lyons, Birmingham, Ala., Waltman Walters, Rochester, Minn., and Alton Ochsner, New Orleans.

SECTION ON UROLOGY

Tuesday, June 10—Afternoon

The meeting was called to order at 2 o'clock by the secretary, Dr. Earl E. Ewert, Boston.

Dr. Warren O. Nelson, Iowa City, read a paper on "Interpretation of the Testicular Biopsy."

Dr. Wyland F. Leadbetter, Boston, presented a paper on "The Treatment of Testis Tumors and Their Pathologic Characteristics."

Drs. Myer M. Melicow and J. W. Hollowell, New York, presented a paper on "Intraurothelial Cancer, Carcinoma in Situ, Bowen's Disease of the Urinary System: Review of Thirty Cases."

Drs. Arthur J. Butt, Pensacola, Fla., Ernest A. Hauser, Cambridge, Mass., Joseph Seifter, Philadelphia, and Joseph Q. Perry, Pensacola, Fla., presented a paper on "Treatment and Prevention of Kidney Stones by Increasing the Protective Urinary Colloids with Hyaluronidase."

Drs. Edwin L. Prien, Brookline, Mass., and J. A. Carr, London, England, presented a paper on "Prevention of Urinary Calculi in the Bedridden Patient."

Dr. W. E. Kittredge, New Orleans, read a paper on "Management of Ureteral Calculi."

Dr. E. Humber Burford, St. Louis, read a paper on "A Critical Survey of the Management of Ureteral Calculi."

The papers of Dr. Leadbetter, Drs. Melicow and Hollowell, Drs. Prien and Carr, and Dr. Kittredge were discussed by Drs. J. C. Kimbrough, Washington, D. C., Leander W. Riba, Chicago, James C. Sargent, Milwaukee, and Michael G. O'Brien, Scranton, Pa.

WEDNESDAY, JUNE 11—AFTERNOON

The following officers were elected: chairman, Dr. Earl E. Ewert, Boston; vice chairman, Dr. Rex E. Van Duzen, Dallas, Texas; secretary, Dr. Reuben H. Flocks, Iowa City; delegate, Dr. Jay J. Crane, Los Angeles; alternate delegate, Dr. Rex E. Van Duzen, Dallas, Texas; representative to Scientific Exhibit, Dr. Norris J. Heckel, Chicago.

Dr. John R. Hand, Portland, Ore., gave the chairman's address.

Dr. Lowrain E. McCrea, Philadelphia, read a paper on "A New Concept of the Vesical Innervation: Its Relationship to the Bladder Management Following Abdomino-Perineal Proctosigmoidectomy."

Drs. Jack Lapides and Austin I. Dodson Jr., Ann Arbor, Mich., presented a paper on "Observation on the Effect of Banthine in Urological Disturbances."

The papers presented by Dr. McCrea and Drs. Lapides and Dodson were discussed by Drs. Joseph H. Kiefer and William J. Baker, Chicago.

Dr. C. D. Creevy, Minneapolis, read a paper on "Facts Concerning Uterosigmoidostomy."

Drs. Fred E. B. Foley and Edward J. Richardson Jr., St. Paul, presented a paper on "Massive Electrocoagulation of Deeply Infiltrating Bladder Tumors Combined with Ligation of the Vena Cava for Prevention of Pulmonary Embolism."

Dr. Alexander Slavcoff, Harrisburg, Pa., read a paper on "Recto-Urethral Fistula."

These three papers were discussed by Drs. Charles C. Higgins, Cleveland, and Raymond G. Bunge, Iowa City.

THURSDAY, JUNE 12—AFTERNOON

Dr. Edward M. Honke, Sioux City, Iowa, read a paper on "Surgical Consideration of Vesical Neck Obstruction in Females."

Dr. Thomas L. Pool, Rochester, Minn., read a paper on "Urologic Problems in the Female."

These two papers were discussed by Drs. James W. Merricks, Chicago, and James I. Farrell, Evanston, Ill.

Dr. John K. Lattimer, New York, read a paper on "New Developments in the Chemotherapy of Renal Tuberculosis."

Dr. Francis H. Redewill, San Francisco, read a paper on "Malacoplakia of the Bladder Compared to Generalized Sarcoidosis: Report of Additional Cases, Pathology, New Treatment."

Drs. Francis G. Harrison and Francis G. Harrison Jr., Philadelphia, presented a paper on "Hematuria with Sickle Cell Disease."

These three papers were discussed by Drs. Frederick A. Lloyd, Russell D. Herrold and J. S. Grove, Chicago.

Drs. John Duff and Thomas A. Morrissey, New York, presented a paper on "Bilateral Simultaneous Retroperitoneal Pneumography."

Dr. Charles M. Stewart, Los Angeles, read a paper on "Delayed Cystograms."

Dr. J. Sydney Ritter, New York, read a paper on "Pneumography as Applied to Urology."

These three papers were discussed by Drs. Irving J. Shapiro, Chicago, and Charles G. Weller, Aurora, Ill.

STATE MEDICAL LEGISLATION

Louisiana

Bills Introduced.—H. 219, to repeal and reenact the law relating to depositions and discovery, proposes, among other things, that in an action in which the mental or physical condition of a party is in controversy, the court in which the action is pending or in which the judgment was originally rendered may order him to submit to a **physical or mental examination by a physician.** The order may be made only on motion for good cause shown and upon notice to the party to be examined and to all other parties and shall specify the time, place, manner, conditions, and scope of the examination, and the person or persons by whom it is to be made. Reports of such examinations shall be delivered to the person examined, or else the results of the examination may not be used as evidence in the trial. H. 526, proposes the establishment of a **Louisiana Board of Institutions** in which would be consolidated the functions of the State Hospital Board and various other similar commissions, agencies, and institutions in the state. S. 119, proposes regulations for the **licensing of dispensing opticians** and defines a dispensing optician as one who prepares and dispenses lenses, spectacles, and eyeglasses to the intended user thereof on the prescription of a physician or optometrist, duly licensed to practice his profession and, in accordance with such prescriptions, measures, adapts, fits, and adjusts such lenses, spectacles, and eyeglasses to the human face for the correction of visual or ocular anomalies of the human eyes. A dispensing optician would be prohibited from engaging in the diagnosis of the disease of the human eye or attempting to determine the refractive powers or visual skills of the human eye, or, in any manner, attempting to prescribe for or treat diseases of the eye or to engage in the practice of optometry. To administer the regulations there would be created a Louisiana State Board of Dispensing Opticians.

Bills Enacted.—H. 525, has become Act No. 48 of the Acts of 1952. It creates a **Louisiana Board of Institutions** to take over the functions of the State Hospital Board and a number of other Louisiana commissions, agencies, and institutions. H. 1058, has become Act No. 49 of the Laws of 1952. It designated March 30 as **Doctors' Day** throughout the State of Louisiana, in honor of the medical profession of the State. S. 91, has become Act No. 53 of the Acts of 1952. It amends the **Medical Practice Act** relative to fees that may be charged by the Louisiana State Board of Medical Examiners.

Massachusetts

Bills Enacted.—CCH Senate Bill No. 2, was adopted June 23, 1952. It orders the committee on the judiciary to make an investigation and study relative to the evidential value of certain **blood tests** in connection with the trial of persons charged with **operating a motor vehicle** while under the influence of intoxicating liquor. S. 288, has become Chapter 296 of the Laws of 1952. It authorizes **medical service plans** to contract with the trustees of the Soldiers' Home in Massachusetts to provide payment for surgical, dental, or medical services of veterans who are eligible to receive the benefits of the services of such Soldiers' Homes.

New Jersey

Bills Enacted.—A. 549, has become Chapter 351 of the Laws of 1952. It amends the law relating to the practice of pharmacy, by, among other things, defining **"prescription"** as an order for drugs or medicines or combinations or mixtures thereof, written or signed by a duly licensed physician, dentist, veterinarian, or other medical practitioner licensed to write prescriptions intended for the treatment or prevention of disease in man or animals, and includes orders for drugs or medicines or combinations or mixtures thereof transmitted to pharmacists through word of mouth, telephone, telegraph, or other means of communication by a duly licensed physician, dentist, veterinarian, or other medical practitioner licensed to write prescriptions intended for the treatment of prevention of disease in man or animals, and such prescriptions received by word of mouth, telephone, telegraph, or other means of communication shall be recorded in writing by the pharmacist and the record so made by the pharmacist shall constitute the original prescription to be filed by the pharmacist; provided that no prescription for any narcotic drug shall be given or transmitted to pharmacists in any manner other than in writing signed by the physician, dentist, veterinarian, or other practitioner giving or transmitting the same nor shall such prescription be renewed or refilled. A. 555, has become Chapter 352 of the Laws of 1952. It provides a licensing law for the licensing and examination of **professional and practical nursing.** S. 28, has become Chapter 300 of the Laws of 1952. It amends the **Medical Practice Act** in relation to the fine that may be recovered for a violation of such act. S. 147, has become Chapter 336 of the Laws of 1952. It provides for the regulation of the **practice of ophthalmic dispensing** by providing for the issuance of certificates to registered qualified ophthalmic dispensers and ophthalmic technicians.

Prepared by the Bureau of Legal Medicine and Legislation.

MEDICAL NEWS

ARKANSAS

Society News.—At its annual session in Little Rock April 20 the Arkansas Academy of General Practice elected Dr. Harry E. Murry, Texarkana, president; Dr. Ralph G. Kramer, Fort Smith, president-elect; Dr. James M. Kolb, Clarksville, vice-president; and Dr. Columbus R. Ellis, Malvern, secretary-treasurer.

State Medical Election.—At the annual meeting of the Arkansas Medical Society in Little Rock, April 21-23, Dr. Sherod A. Drennen, Stuttgart, was installed as president; Dr. Richard C. Dickinson, Horatio, was chosen president-elect; Dr. Daniel H. Autry, Little Rock, treasurer; and Dr. William R. Brooksher, Fort Smith, secretary.

CALIFORNIA

University News.—Wendell M. Stanley, Ph.D., Nobel Laureate and director of the virus and biochemistry laboratory on the Berkeley campus of the University of California, has been appointed to a four year term on the National Cancer Advisory Council.

Dr. Hara Addresses Japanese Meetings.—Dr. H. James Hara, director of graduate study in otolaryngology, College of Medical Evangelists, Los Angeles, held a series of clinical otolaryngological conferences and lectures at the annual meeting of the Japan Oto-Rhino-Laryngological Society in Sendai, May 2-4.

Hospital News.—Dr. J. La Monte Zundell has joined the medical staff of St. Francis Hospital, San Francisco, as director of pathology and clinical laboratories. Dr. Zundell was recently director of laboratories at the U. S. Naval Hospital in Oakland and previously held the same position in naval hospitals in Long Beach, Chelsea, Mass., and at the Naval Medical School in Bethesda, Md. Dr. David A. Wood, director of the Cancer Research Institute and professor of pathology at the University of California, will serve as chief consultant in pathology at the hospital.

CONNECTICUT

Hospital News.—Sixty-five members of the staff of the New Britain General Hospital have contributed $105,000 to a $600,000 fund for a new hospital wing. Plans call for a total expenditure of $1,500,000, of which $900,000 has been raised.

Fifty Year Pins Presented.—At the annual dinner of the Connecticut State Medical Society in Hartford, April 30, pins indicating 50 years of active membership in the society were presented to Drs. Millard F. Allen of New Haven (in absentia), William T. Bronson of Danbury, Patrick J. Dwyer of Waterbury, and Charles O. Purinton of New Hartford (in absentia).

Prizes for Art Work.—At the 1952 exhibit of the Connecticut Physicians Art Association Dr. William W. Wright, West Hartford, was awarded the prize for the best entry. H. Saxton Burr, Ph.D., New Haven, took first prize in the landscape classification, and Dr. Harry E. Allen, Waterbury, was given honorable mention. Dr. Walter Grossmann, Hartford, ranked first in the portrait competitions.

DISTRICT OF COLUMBIA

Arthritis Clinic.—George C. Kenney, president of the Arthritis and Rheumatism Foundation, announces that an outpatient clinic for the treatment of early cases of arthritis has been established at Freedmen's Hospital in Washington, D. C. Dr. James A. Watson is in charge of the reorganized Freedmen's Hospital Arthritis Clinic.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

Fellowship in Child Psychiatry.—The child center of the department of psychology and psychiatry, Catholic University of America, Washington, D. C., announces one fellowship in child psychiatry for physicians who have completed one year of internship and one year of psychiatric training under supervision approved for the American Board of Psychiatry and Neurology. For information, write Director, Child Center, Catholic University of America, Washington 17, D. C.

FLORIDA

Society News.—At the annual spring meeting of the Florida Radiological Society, Dr. Thomas H. Lipscomb of Jacksonville was elected president; Dr. Nelson T. Pearson of Miami, vice-president; and Dr. A. Judson Graves, Jacksonville, secretary-treasurer.

State Medical Election.—At its annual meeting in Hollywood, April 29-30, the Florida Medical Association installed Dr. Robert B. McIver, Jacksonville, as president; elected Dr. Frederick K. Herpel, West Palm Beach, president-elect; and re-elected Dr. Samuel M. Day, Jacksonville, editor of the *Journal of the Florida Medical Association.*

Personals.—Dr. Carlos P. Lamar, Miami, addressed the First Inter-American Conference on Gastroenterology recently in Mexico City on "The Control and Management of Diabetes Mellitus in the U. S. A."——Dr. David Sloane recently resigned as chief of the orthopedic service of the Veterans Administration Hospital at Lake City, and has entered private practice in Orlando.

ILLINOIS

Society News.—The Illinois Radiological Society recently elected Dr. William DeHollander, Springfield, president; Dr. Gordon M. Perisho, Quincy, vice-president; and Dr. Stephen L. Casper, Quincy, secretary-treasurer.

Roscoe Miller Honored.—At its annual meeting, June 11, the Alumni Association of Northwestern University bestowed on Dr. J. Roscoe Miller of Evanston, president of the university, its highest honor, the Alumni Medal. The award was conferred for his "eminence in medical research and educational circles." Dr. Miller, who received his medical degree from Northwestern University Medical School, Chicago, in 1930, served the medical school successively as assistant dean, dean, assistant professor, associate professor, and professor of medicine. He was made president of Northwestern University in 1949.

Chicago

University News.—Dr. Huberta M. Livingstone has resigned as chief of anesthesiology at the University of Chicago Clinics. She has been on the surgical staff of the University of Chicago since 1928 and was recently awarded an honorary key by the medical alumni of the university.

Sudent Aid Fund in Honor of Dr. Poncher.—The 1952 senior class of the University of Illinois College of Medicine has established a Medical Student Aid Fund in honor of Dr. Henry G. Poncher, professor of pediatrics and head of the department. It is anticipated that students who receive gifts from this source will make contributions to the fund when financially able. Dr. Poncher's resignation from the faculty becomes effective Aug. 1, when he will enter private practice (see THE JOURNAL, March 22, p. 1040).

Dr. Oldberg Named Symphony President.—The Orchestra Association of Chicago has chosen as its president Dr. Eric Oldberg, head of the department of neurology and neurological surgery at the University of Illinois College of Medicine. Dr. Oldberg is an associate editor of the *Journal of Neuropathology,*

a director of the John Crerar Library, vice-president of National Medical Fellowships, and governing life member of the Art Institute of Chicago. He has been a member of the Chicago Symphony's governing body since 1940 and vice-president since 1948.

Personals.—Dr. Thomas J. Coogan was elected president of the St. Louis University School of Medicine Alumni Association at its annual meeting in Chicago June 10.——Dr. Emanuel Marcus, associate in surgery, Chicago Medical School, was recently awarded the Chicago Surgical Society prize for 1952 for his research work on "Homologous Heart Grafts."——At the annual meeting of the medical alumni of the University of Chicago, June 11, Dr. Walter Lincoln Palmer, Chicago, was installed as president.

INDIANA

University News.—Dr. John D. Van Nuys, dean, Indiana University School of Medicine, Indianapolis, was awarded an honorary doctor of science degree by Wabash College, Crawfordsville, on June 8.——Dr. George J. Garceau, professor of orthopedic surgery, Indiana University School of Medicine, Indianapolis, addressed the Joint Meeting of the English Speaking Orthopedic Associations in London on "Filum Terminale Syndrome."——Dr. Edwin A. Lawrence, professor of surgery, Indiana University School of Medicine, Indianapolis, discussed "Problems in Gastrointestinal Cancer" on three cancer programs held in June by the Louisiana Academy of General Practice at Independence, Alexandria, and Shreveport.

IOWA

Three Physicians Honored.—During the annual meeting of the Iowa State Medical Society three physicians were honored for their contributions to organized medicine. Dr. Daniel J. Glomset, Des Moines, was commended for his research on cardiac conduction systems and in establishment of the Iowa State Medical Society's Speakers Bureau. Dr. Walter A. Sternberg, Mount Pleasant, received his award for positions of importance within the organization of the society. Dr. John T. McClintock, Iowa City, was cited for contributions while a professor in the State University of Iowa College of Medicine, Iowa City.

MAINE

State Society Awards.—At the annual banquet, June 24, the Maine Medical Association presented 50 year lapel pins to the following members who were graduated from medical school in 1902: Drs. Franklin A. Ferguson, Portland; James G. S. Jamieson, Portland; Charles H. Leach, Tenants Harbor; and Richard H. Stubbs, Augusta. Sixty year bars were bestowed on the following members, who received 50 year medals in 1942: Drs. Verdeil O. White, Springvale, and Eugene L. Stevens, Belfast. The following members, who received 50 year medals in June, 1947, were awarded 55 year bars: Drs. Louis N. Albert, Van Buren; Louis B. Hayden, Livermore Falls; Clarence C. Peaslee, Portland; and Ward J. Renwick, Auburn.

MASSACHUSETTS

Personal.—The president and fellows of Harvard College, at its 316th commencement June 19, 1952, awarded the honorary degree of doctor of science to Brig. Gen. James Stevens Simmons, U. S. Army (ret.) dean of the Harvard School of Public Health, Boston.

Shattuck Award.—At the annual meeting of the Massachusetts Public Health Association in Boston, April 24, the third Lemuel Shattuck Award was conferred on Prof. Curtis Morrison Hilliard, head of the department of biology and public health at Simmons College, Boston. In presenting the award, his activities in the Red Cross, the Massachusetts Tuberculosis and Health League, the National Tuberculosis Association, the Massachusetts Civic League, and the Massachusetts Public Health Association were listed as those of one who is "an example of what a high-minded citizen and public servant should be."

MICHIGAN

McGraw Lecture.—The annual McGraw Lecture was given May 13 by Dr. Warren H. Cole, professor of surgery, University of Illinois, Chicago, on "Residency Training Programs." The lectureship was established in 1948 by the Detroit Surgical Association in honor of the late Dr. Theodore Andrews McGraw, a founder and first professor of surgery at Detroit College of Medicine, now Wayne University College of Medicine.

Urgent Need for Volunteers.—Three well baby clinics operated by the Detroit Department of Health at Herman Kiefer Health Center, North End Clinic, and St. Antoine Health Center have closed because of the lack of volunteer physicians to staff these clinics. Any physician who can volunteer is requested to call Dr. Charles P. Anderson, WO 5-3000. Each clinic lasts about an hour, and there is a token payment of $5 per clinic session. The closed clinics are in a section of the city where there is need for preventive medicine for the indigent.

MINNESOTA

Psittacine Regulation Rescinded.—Minnesota State Health Regulation Number 2200, which prohibited the importation, purchase, breeding, sale, or giving away of birds of the psittacine family, was rescinded as of May 23 by the state board of health. Reasons for the action were: 1. Psittacosis is now known to be widespread among birds that are not members of the psittacine family. 2. Regulations of this type are difficult to enforce. 3. Psittacosis usually responds rapidly to antibiotic treatment, and there now is less danger of serious illness and complications from the disease.

MISSOURI

University News.—Norman M. Sulkin, Ph.D., associate professor of anatomy, St. Louis University School of Medicine, will join the staff of Bowman-Gray School of Medicine of Wake Forest College, Winston-Salem, N. C., on Aug. 1, as associate professor of anatomy. He came to St. Louis University in 1946.

Poliomyelitis Grants.—March of Dimes grants totaling $55,565 have been awarded to scientists of Washington University School of Medicine, St. Louis, for research in fields related to poliomyelitis. The largest grant, $27,875, will enable scientists under the direction of Dr. James O. Elam, assistant professor of anesthesiology, to investigate the circulatory collapse that may occur in fatal cases of bulbar polio. A grant of $13,241 was made to a project headed by Dr. James Lee O'Leary, professor of neurology, to investigate respiratory difficulties arising from damage to nerve centers in the brain. Investigators also hope to gather data that will lead to early recognition of impending breathing difficulties. A grant of $7,669 has been assigned to Dr. Robert A. Moore, dean of the medical school, for continuation of the teaching and service programs of the division of physical medicine, and the final grant of $6,750 will enable scientists under Dr. Carl F. Cori, professor of biological chemistry and a Nobel prize winner, to attempt to purify a key enzyme of the brain involved in the metabolism of nerve tissue.

NEW HAMPSHIRE

New Faulkner House.—On May 14, open house was held at Faulkner House, a unit of Mary Hitchcock Memorial Hospital at Hanover. The new Faulkner House, latest $2 million unit of a three year building program, provides a department of physical medicine, central supply, piped oxygen and suction to each bed, and a postanesthesia ward. Its 120 beds bring the total hospital bed capacity to 325. The old Clinic Building will be used as a residence for interns and residents.

The Mary Hitchcock Memorial Hospital is a regional installation with more than 90% of its admissions referred by physicians outside the immediate Hanover area and located in communities in New Hampshire and Vermont. While it more directly serves the upper Connecticut River Valley a large number of persons from the rest of New Hampshire use its services. Mary Hitchcock Memorial Hospital has grown from a 36 bed institution in 1893 to its present position as the hub of a regional medical center.

NEW JERSEY

Dr. Lahey to Deliver Memorial Lecture.—On Oct. 1 Dr. Frank H. Lahey of Boston will deliver the second annual Frank C. Henry Jr. Memorial Lecture on "Newer Developments as to the Origin and Treatment of Thyroid Disease." The lecture is in tribute to the late chief of surgery of Perth Amboy General Hospital, who was killed in an automobile accident March 6, 1951. It is held under the sponsorship of the Academy of Medicine of the Raritan Bay area. Early reservations for the lecture and for the dinner that will precede it are recommended. Reservations may be made through the Academy of Medicine of the Raritan Bay Area, 18 Green St., Woodbridge, N. J.; telephone Woodbridge 8-1710.

Personals.—Dr. William O. Wuester, Elizabeth, was recently named the 1952 recipient of the Edward J. Ill Award of the Academy of Medicine of Northern New Jersey. The award, which honors the memory of the late Dr. Ill of Newark, is given periodically to a physician who besides achieving prominence in medicine also participates actively in community affairs.——Dr. Hyman I. Goldstein, Camden, addressed the Third Pan-American Congress of Gastroenterology and the First National Mexican Congress of Gastroenterology at their joint meeting in Mexico City on pancreatic and hepatobiliary tract diseases and lectured on gallbladder and liver diseases at the National University of Mexico and before the Society of Cardiology, Mexico City.

NEW YORK

Appoint Staff Members to Meet Intern Shortage.—The Rochester General Hospital, being faced with a shortage of interns, has met the needs of its emergency department by appointing a panel of staff members to cover, without remuneration, the uncovered days and nights.

Society Elections.—The new Westchester Radiological Society chose Dr. Walter J. Brown, Mount Kisco, secretary-treasurer.——At a recent meeting of the Northeastern New York Radiological Society Dr. Orville L. Henderson, Troy, was elected president; Dr. Joseph Rosenstein, Saranac Lake, vice-president; and Dr. John Roach, Albany, secretary-treasurer.

Personals.—Dr. Christopher Fletcher, director of the Buffalo State Hospital, recently retired after 40 years of service with the hospital.——Dr. Charles Buckman, assistant commissioner of the State Department of Mental Hygiene, has been transferred to Kings Park State Hospital, as senior director to fill the vacancy created by the retirement of Dr. Arthur E. Soper. Dr. James A. Brussel, assistant director of Willard State Hospital, who succeeds Dr. Buckman as assistant commissioner, will be in charge of the New York City office of the department.——In recognition of her efforts in the advancement of women in medicine the 1952 award of the New York State Women's Medical Society has been bestowed on Dr. Madge C. L. McGuinness, New York, veteran member of the house of delegates of the Medical Society of the State of New York.——Dr. Louis H. Bauer, Hempstead, L. I., President of the American Medical Association, has been reelected chairman of the National Civilian Consultants Conference to the Air Force Surgeon General.

New York City

Alumni Awards.—At the alumni day celebration of Mount Sinai Hospital on April 19, the following physicians, named "alumni men of the year," received medallions: Dr. Joseph H. Globus, editor of the *Journal of Mount Sinai Hospital;* Dr. Sadao Otani, associate professor of pathology, Columbia University; Dr. Leo Edelman, administrator of the hospital's sick benefit fund; Dr. Elmer S. Gais; Dr. Abraham Hyman, chairman of the alumni loan fund; and Dr. Arthur M. Master, president of the New York County Medical Society.

Ambulance Service for Premature Babies.—The Hospital Council of Greater New York reports that the ambulance service for premature babies, set up by the city in 1948, has resulted in a substantial decrease in the mortality of premature infants. The service, conducted by the department of health, provides free ambulances to transport premature babies to special nurseries in selected hospitals.

According to the report of the council, among all premature babies born in 1949 who weighed less than 1,000 gm. at birth, 95.3% died in the first month of life. The neonatal mortality of premature babies of similar weight who were transported to special centers was 70.2%.

Community Service Project.—At a recent dinner meeting of the Community Service Society Dr. Martin Cherkasky, director of Montefiore Hospital, reported that the family health maintenance demonstration would have to run for at least five years before substantial results could be obtained. The project, which is being handled jointly by the Community Service Society, Montefiore Hospital, and the College of Physicians and Surgeons of Columbia University, is dedicated to showing families how to keep well. It is felt that the pilot scheme, under which 20 families were studied within the last 12 months, warrants the enlistment of about 100 families by the end of this year and between 200 and 300 some time next year, with an average of 4 persons in each family. Each member of the family receives physical examinations. Interviews by social workers, inspection of the home by public health nurses, and tests by psychologists are followed by consultations among the team experts and the families to iron out trouble. The society maintains headquarters at 105 E. 21st St.

NORTH CAROLINA

Service for Children.—Six North Carolina children, all of whom have undergone plastic surgery at Duke Hospital, Durham, are attending a six week summer session for children with harelip or cleft palate at the hospital. The new service is part of a program to develop better treatment methods. The crippled children's section of the State Board of Health will pay medical costs for the six children at the hospital, and local welfare departments are paying for room, board, and transportation.

OHIO

Personal.—Dr. Martin H. Fischer, professor emeritus of physiology, University of Cincinnati College of Medicine, recently was given the Ohio Award for 1952 by the Ohio Chapter of the American Institute of Chemists. Dr. Fischer spoke on "Molecules, Medicine, and Men."

State Medical Election.—At the annual meeting of the Ohio State Medical Association in Cleveland, May 20-22, Dr. Harve M. Clodfelter, Columbus, was installed as president. Dr. Paul A. Davis, Akron, was chosen president-elect, and Dr. Richard L. Meiling, Columbus, was elected treasurer. The 1953 annual meeting will be held in Cincinnati, April 21-23.

OKLAHOMA

Cancer Detection Clinic.—The Garfield-Kingfisher County Medical Society has accepted the offer by the Enid General Hospital of a suite of rooms to house a permanent cancer detection clinic in Enid. Each patient must be referred by his physician, who will indicate whether he wishes the patient to be referred back to him or sent to the University Hospital at Oklahoma City or to a local hospital for treatment. The clinic will be operated strictly on a nonfee basis; all professional services, including the services of an x-ray technician, will be donated. The only salaried worker will be the keeper of the records. The cooperation and participation of all physicians in this area, including oral surgeons of the dental profession, is requested. As soon as practicable each will be invited to take turns at duties in the clinic.

SOUTH CAROLINA

State Medical Election.—The South Carolina Medical Association has chosen as president Dr. Lawrence Thackston, of Orangeburg. Dr. Charles R. F. Baker of Sumter is president-elect; Dr. George D. Johnson of Spartanburg, vice-president; and Dr. Robert Wilson Jr., of Charleston, secretary.

TENNESSEE

Personal.—John L. Wood, Ph.D., professor of chemistry, University of Tennessee Medical Units, Memphis, became head of the department of biochemistry on July 1. Dr. Wood is also a consultant to the medical division of Oak Ridge Institute of Nuclear Studies at Oak Ridge.

University News.—Dr. Elliot Voss Newman has been appointed Joe and Morris Werthan Professor of Experimental Medicine at Vanderbilt University School of Medicine, Nashville. Dr. Newman was formerly associate professor of medicine at Johns Hopkins University School of Medicine, Baltimore.——Dr. Charles Rawlinson Park has been appointed head of the physiology department at Vanderbilt University School of Medicine, Nashville, succeeding Charles E. King, Ph.D., who requested relief from administrative duties but will remain in the department as professor of physiology. Dr. Park joined the faculty of the Washington University School of Medicine, St. Louis, in 1949 as Welch Fellow in Internal Medicine, instructor in medicine, and assistant physician to Barnes Hospital.——Dr. John William Hillman has been appointed assistant professor of surgery at Vanderbilt University School of Medicine. Dr. Hillman has been instructor in orthopedic surgery at the Johns Hopkins University School of Medicine, Baltimore, during the past year. ——Dr. Robert I. Carlson, Albuquerque, N. M., has been appointed associate professor of surgery, Vanderbilt University Medical School. Dr. Carlson joined the department of medicine and surgery of the Veterans Administration in July, 1947, and since December, 1947, has been serving as chief of the surgical service at the Veterans Administration Hospital in Albuquerque.

WISCONSIN

Hospital News.—Mr. Alvin Langehaug, formerly superintendent of Fairview Hospital, Minneapolis, will become administrator of the Milwaukee Hospital on July 15. Mr. Langehaug is president of the Lutheran Hospital Association of America.

Addition to Medical School.—Ground has been broken for the Marquette University Medical School's new $800,000 addition to its present building at 561 N. 15th St., Milwaukee. The first floor will house the new Carey Medical Library, named for the late dean of the school and his wife, Dr. and Mrs. Eben J. Carey. The addition will connect the medical school to the dental school and form a closed rectangle extending from North 15th Street to North 16th Street.

New Physical Therapy Course.—A physical therapy course will be offered for the first time this fall in the department of physical medicine and rehabilitation at Marquette University Medical School, Milwaukee. Dr. Ray G. Piaskowski, chief of physical medicine rehabilitation service at the Veteran's Hospital and head of the physical medicine department at Marquette, will be in charge of the program. The four year course will be limited to 20 students. The curriculum will include two years of preclinical study in the college of liberal arts and two years of actual clinical training through supervised internships in the medical school.

University News.—Assisted by the exchange program of the Department of State, Dr. Hjalti Thorarinsson and his wife, Dr. Alma Anna Thorarinsson of Iceland, have been offered simultaneous scholarships at the University of Wisconsin General Hospital in Madison. Hjalti Thorarinsson, a graduate of University of Iceland Medical School, Reykjavik, has been assistant surgeon at the State Hospital for the past two years. He will serve as a resident surgeon at the University of Wisconsin School of Medicine for about one year. His wife, also a graduate of the University of Iceland Medical School, will take her internship at the University of Wisconsin.

ALASKA

Clinics in Fairbanks.—Newly established eye, ear, nose, and throat clinics are to be held monthly in Fairbanks through the Health Department's Maternal and Child Health Division. Dr. Hugh B. Fate, Alaska Department of Health consultant in otolaryngology and ophthalmology in that city, will conduct the clinics, which are available for medically indigent children under 21 years of age. Orthopedic clinics are also being conducted once a month in Fairbanks by Dr. Paul B. Haggland, orthopedic consultant for the health department.

GENERAL

Medical Directors for Civil Defense.—The regional offices of the Federal Civil Defense Administration have been authorized to employ full-time medical directors to handle medical civil defense problems arising within regional defense areas. The salary for this position is $10,800 per year.

Fellowships Awarded.—Baxter Laboratories, Inc. of Morton Grove, Ill., recently awarded 10 fellowships for graduate work in the medical sciences. Two short-term fellowships were also given. The Baxter fellowship program was initiated in 1951 to encourage students to continue studies in advanced research. Nominations are received from medical schools throughout the nation.

Society Election.—At the annual meeting of the American Proctologic Society in Milwaukee, June 4-7, Dr. Newton D. Smith, Rochester, Minn., was elected president; Dr. W. Wendell Green, Toledo, Ohio, president-elect; Dr. Julius E. Linn, Birmingham, Ala., vice-president; Dr. Stuart T. Ross, Hempstead, N. Y., secretary; and Dr. Rufus C. Alley, Lexington, Ky., treasurer.

Discontinue Kodachrome Professional Film Processing.—The Eastman Kodak Company announces that it will not process Kodachrome Professional Sheet Film after July 31. Physicians having such film in their possession are advised to send it immediately to the Eastman Kodak Company, Rochester, N. Y. The company will continue to offer processing service for Kodachrome film in the no. 135 and no. 828 amateur film sizes for miniature cameras, and for 8 mm. and 16 mm. motion picture films.

Personal.—Dr. Jack N. Hunt, senior lecturer in physiology, Guy's Hospital Medical School, London, has come to the United States under a fellowship from the Rockefeller Foundation. He will continue his studies on the function of the digestive tract at the University of Tennessee College of Medicine, Memphis, working with the research group of Dr. John P. Quigley, chief of the division of physiology, and in New York will work in the gastroenterology research laboratory of Mt. Sinai Hospital under the direction of Franklin Hollander, Ph.D., head of the laboratory.

Awards for Cancer Research.—The American Cancer Society has awarded 48 fellowships in cancer research for 1952-1953. Two of these are British-American exchange fellowships. The total value of the awards is $196,649. Recipients of the awards will study in 30 institutions in the United States and in three foreign countries. The society has also awarded six scholar grants to help promising scientists who have recently completed training to establish themselves as cancer investigators. These grants provide $6,000 annually for a period of three years to the institution at which the scholar elects to carry on his research.

Medical Exhibitors Elect Officers.—Mr. A. Paul Burton, vice-president of W. B. Saunders Company of Philadelphia, has been elected president of the Medical Exhibitors Association. This organization, with a membership of over 200 of the leading technical exhibitors at A. M. A. meetings, acts as a liaison between the American Medical Association and other professional groups who hold annual meetings. Other new officers include: Mr. S. A. Montgomery, manager, professional relations, Gerber Products Company, vice-president; Mr. William W. Gallagher, MacGregor Instrument Company, treasurer; and Mr. Don M. Robertson, Sharp and Dohme, secretary.

American Surgeons Honored by French.—During the recent meeting of the International College of Surgeons at Bordeaux, France, seven American surgeons were honored by the French. M. André Marie, national minister of education, conferred honorary citizenship on Dr. Max Thorek of Chicago, founder and secretary-general of the college, and on Dr. Henry W. Meyerding,

Rochester, Minn., president of the United States chapter of the college. Medals of honor were bestowed on Drs. William W. Babcock and Harry E. Bacon of Philadelphia; Edward L. Compere of Chicago; Arnold S. Jackson, Madison, Wis., secretary of the United States chapter; and Roland M. Klemme of St. Louis.

Pharmaceutical Awards.—Dr. Paul B. Dunbar, Ph.D., commissioner of the Federal Food and Drug Administration from 1944 to 1951, was recently given the special annual award of the American Pharmaceutical Manufacturers' Association for outstanding service in helping "to uphold the high standards of public health" in the United States.

René J. Dubos, Sc.D., recently received the 1952 annual Research Award of the American Pharmaceutical Manufacturers' Association for scientific contributions to the "welfare of mankind." These included research resulting in the discovery of tyrothricin and gramicidin. Dr. Dubos is currently president of the Society of American Bacteriologists.

International Fertility Association.—The International Fertility Association was recently founded in Rio de Janeiro, Brazil, to study the problems of fertility and sterility in their broad implications, to stimulate scientific investigation and social awareness in this field, to standardize and orient nomenclature, terminology, tests, and evaluation of diagnostic methods and therapy throughout the world, and to hold international congresses in the specialty. The first World Congress on Fertility and Sterility sponsored by the new society will be held in conjunction with the American Society for the Study of Sterility in New York in May, 1953. Information may be secured from Dr. Carlos D. Guerrero, Secretary-General, Miguel E. Schulz No. 19, Mexico, D. F., or from Dr. Abner I. Weisman, Associate Secretary-General, 1160 Fifth Ave., New York.

Prevention of Asphyxial Deaths.—The New York Eye and Ear Infirmary in cooperation with the Society for the Prevention of Asphyxial Death Inc., announces the continuation of its out-of-town courses in laryngoscopy and intubation for prevention and treatment of acute asphyxial accidents. Classes will meet in Atlantic City, July 11-12, and Baltimore Aug. 2-3. The New York City courses, which are given the first Friday and Saturday of the month, will be resumed Sept. 5-6. The matriculation fee is $50. Out-of-town courses require a preparatory period of two months for logistical development. Those interested in attending a stated course or in having a course presented in a certain city should communicate with the Secretary, SPAD, Inc., 2 East 63 St., New York 21.

Trip to South America.—Pierre Dorolle, deputy director general of the World Health Organization, and Dr. Fred L. Soper, director, Pan American Sanitary Bureau, WHO Regional Office, left June 21 for a six weeks' trip through South America to confer with ministers and directors of public health of the member governments and with field personnel, on public health programs assisted by the bureau. The itinerary includes Colombia, Ecuador, Peru, Brazil, Uruguay, Argentina, and Chile. The bureau's three zone offices in Lima, Rio de Janeiro, and Buenos Aires will be visited. Dr. Dorolle will address the Colombian Academy of Medicine in Bogota on the relation between curative and preventive medicine. There will also be an opportunity to attend a session of the third Nursing Workshop sponsored by PASB in Lima, July 30 through Aug. 10.

LATIN AMERICA

Yellow Fever in Costa Rica.—During the first half of June an outbreak of jungle yellow fever was reported in the Baru River zone in the southern jungle region of Costa Rica. Five cases were confirmed. For the period June 16-20, two deaths were reported.

FOREIGN

Aged Persons to Have Own Village.—Israel, which already has established a "village of the blind," will now have a "village of the aged." The community, which will house elderly persons without families, is to be built near Tel Aviv under the auspices of the Israel Ministry of Social Welfare.

Personal.—Dr. Theophile A. Alajouanine, professor of clinical neurology, University of Paris, France, received the doctor of science degree at the commencement of the University of Illinois Chicago Professional Colleges in Chicago, June 19. Dr. Alajouanine, who is the first to receive an honorary degree from the university's Chicago Professional Colleges since 1946, is the author of more than 400 publications on neurological diseases, including four books.

Meeting of Residents in Paris.—The American Hospital of Paris held a meeting of the Residents-Ex-Residents Association, May 2, in Paris. The following papers were presented:

John Converse, New York, Use of ACTH in Burns.
D. Briggs, Paris, Experience with Cortisone and ACTH.
Austin McCawley, Paris, Cirrhosis of the Liver and Peripheral Neuritis.
Maurice A. Hardgrove, Milwaukee, Liver Function Studies.
Christian P. Nezelof, Paris, Histopathology of Liver Diseases.
Giles S. Terry, Scarsdale, N. Y., The Changing Face of Medicine.
Franceis de Gaudar D'Allaines, Paris, Cardiac Surgery.

Dr. Laurence S. Fuller, Columbia, S. C., was elected president of the association, and Drs. J. R. Murphy and William Burke of New York were named treasurer and secretary, respectively.

World Congress of Jewish Physicians.—The Medical Association of Israel announces that the second World Congress of Jewish Physicians will convene in Israel Aug. 10-14. The first congress was held in Israel in 1936. Participants in the program on Wednesday include:

J. Rogoff, Cleveland, Adrenal Cortical Hormones.
Sidney W. Gross, New York, Diagnosis and Treatment of Brain Tumors.
B. Zondek, Jerusalem, Action and Inactivation Mechanism of the Estrogens.
Benjamin M. Gasul, Chicago, Fundamental Problems in Congenital Heart Diseases.
I. Berenblum, Rehovot, Israel, Modern Trends in Tumor Causation.
A. Baruk, Paris, Activity of ACTH in Cerebral Circulation.
Leo M. Taran, Long Island, N. Y., Rheumatic Fever in the Light of the Latest Research.

Information may be obtained from the Medical Association of Israel P. O. B. 1342, Jerusalem, Israel. Flight reservations may be made through the American Physicians Fellowship Committee of the Israel Medical Association, which has set up a special APFC Congress Fund by means of which round trip reservations may be procured for $790 per person. Transportation deposit of $100 should be mailed to APFC headquarters at 273 Main St., Nashua, N. H.

Physical Medicine Congress in London.—The International Congress of Physical Medicine will convene in London, England, July 14-18, under the presidency of the Right Hon. Lord Horder, G.C.V.O. The sessions will open Monday afternoon with a "Review of Physical Medicine in the Past Decade," in which Dr. Frank H. Krusen, Rochester, Minn., will participate. Tuesday morning will be devoted to a symposium on "Physical Education," with Lieut. Col. John H. Kuitert, U. S. Army, as one of the participants. On Wednesday morning Dr. Howard A. Rusk, New York, will collaborate in a symposium on "Rehabilitation and Resettlement." Thursday morning there will be a symposium on "The Management of the Chronic Rheumatic and Other Disorders of the Locomotor System," and on Friday one on "Electrodiagnostic Methods." Other representatives from the United States whose papers will be among the 52 presentations on the program include:

Robert L. Bennett, Warm Springs, Ga., Supportive and Assistive Apparatus in Convalescent Poliomyelitis.
Miland E. Knapp, Minneapolis, Results of Treatment of Acute Poliomyelitis at the Kenny Institute.
Alvin B. C. Knudson, Washington, D. C., Physical Medicine and Rehabilitation in the Veterans Administration.
Frederic J. Kottke, Minneapolis, Studies on Vasomotor Activity in the Feet Following Acute Anterior Poliomyelitis.
Edward W. Lowman, Rochester, Minn., Rehabilitation of the Chronic Rheumatoid Arthritis Derelict.
William D. Paul, Iowa City, Studies on Permeability of the Synovial Membrane.

CORRECTION

Dr. Harold Brandaleone.—The name of the medical director of the Third Avenue Transit System of New York City is Dr. Harold Brandaleone, not Dr. Frank Brandaleone, as stated in THE JOURNAL, June 14, p. 670.

MEETINGS

ALASKA TERRITORIAL MEDICAL ASSOCIATION, Anchorage, Aug. 21-23. Dr. William P. Blanton, P. O. Box 2569, Juneau, Secretary.

AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS, The Homestead, Hot Springs, Va., Sept. 4-6. Dr. William F. Mengert, 2211 Oak Lawn Ave., Dallas, Texas, Secretary.

AMERICAN CONGRESS OF PHYSICAL MEDICINE, Roosevelt Hotel, New York, Aug. 25-29. Dr. Frances Baker, One Tilton Ave., San Mateo, Calif., Secretary.

AMERICAN PHYSIOLOGICAL SOCETY, New Orleans, Sept. 4-6. Dr. E. F. Adolph, University of Rochester School of Medicine and Dentistry, Rochester, N. Y., Secretary.

NATIONAL MEDICAL ASSOCIATION, Chicago, Aug. 11-15. Dr. John T. Givens, 1108 Church St., Norfolk 10, Va., General Secretary.

NEVADA STATE MEDICAL ASSOCIATION, Reno, Aug. 21-23. Dr. William A. O'Brien III, 505 Chestnut St., Reno, Secretary.

POST GRADUATE MEDICAL ASSEMBLY OF SOUTH TEXAS, Shamrock Hotel, Houston, July 21-23. Dr. C. A. Dwyer, 229 Medical Arts Bldg., Houston, Secretary.

RENO SURGICAL SOCIETY CONFERENCE, Reno, Nevada, Aug. 21-23. Dr. Olin C. Moulton, 130 N. Virginia St., Reno, Nevada, Chairman.

ROCKY MOUNTAIN RADIOLOGICAL SOCIETY, Denver, Aug. 7-9. Dr. Maurice D. Frazer, 1037 Stuart Bldg., Lincoln, Neb., Secretary.

U. S. CHAPTER, INTERNATIONAL COLLEGE OF SURGEONS, Conrad Hilton Hotel, Chicago, Sept. 2-5. Dr. Arnold S. Jackson, 1516 Lake Shore Drive, Chicago, Executive Secretary.

UTAH STATE MEDICAL ASSOCIATION, Salt Lake City, Sept. 4-6. Dr. T. C. Weggeland, 42 S. Fifth East St., Salt Lake City, Secretary.

WEST VIRGINIA STATE MEDICAL ASSOCIATION, The Greenbrier, White Sulphur Springs, July 24-26. Mr. Charles Lively, P. O. Box 1031, Charleston, Executive Secretary.

INTERNATIONAL

AMERICAN CONGRESS OF INDUSTRIAL MEDICINE, Rio de Janeiro, Brazil, Sept. 20-28. General Secretarial Office: Calle Arenales No. 981 Buenos Aires, Argentina.

AUSTRALASIAN MEDICAL CONGRESS, Melbourne Victoria, Australia, Aug. 22-30. Dr. C. H. Dickson, Medical Society Hall, 426 Albert St., East Melbourne, Victoria, Australia, General Secretary.

EUROPEAN CONGRESS OF CARDIOLOGY. University of London, Bloomsbury, W.C.1, England, Sept. 10-12. Dr. K. Shirley Smith, 35 Wimpole St., London, W.1, England, Secretary.

EUROPEAN SOCIETY OF CARDIOVASCULAR SURGERY, Strasbourg, France, Oct. 3-4. Sir James Learmonth, Department of Surgery, University New Buildings, Edinburgh 8, Scotland.

INTERAMERICAN CARDIOLOGICAL CONGRESS, Buenos Aires, Argentina, Aug. 31-Sept. 7. Dr. Blas Moia, Larrea 1132, Buenos Aires, Argentina, Secretary-General.

INTER-AMERICAN CONGRESS OF PUBLIC HEALTH, Havana, Cuba. Sept. 27-Oct. 1. Pan-American Sanitary Bureau, 2001 Connecticut Ave., Washington, D. C.

INTER-AMERICAN CONGRESS OF RADIOLOGY, Mexico City, Mexico, Nov. 2-8. Dr. Guido Torres Martinez, Marsella No. 11, Mexico, D.F., Secretary-General.

INTERNATIONAL CONGRESS OF BIOCHEMISTRY, Paris, France, July 21-27. Prof. Jean Courtois, 4, Avenue de l'Observatoire, Paris 6e, France, Secretary.

INTERNATIONAL CONGRESS OF DERMATOLOGY AND SYPHILOLOGY, London, England, July 21-26. Dr. Gordon B. Mitchell-Heggs, 5, Lisle St., London, W.C.2, England, General Secretary.

INTERNATIONAL CONGRESS ON DISEASES OF THE CHEST, Rio de Janeiro, Brazil, Aug. 24-30. Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, Executive Secretary.

INTERNATIONAL CONGRESS OF HAEMATOLOGY, Mar del Plata, Argentina, Sept. 21-26. Dr. Carlos Reussi, Anchorena 1710, Buenos Aires, Argentina, Secretary.

INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE, Nice-Cannes, France, and Monaco, Sept. 8-14. Dr. F. A. Sondervorst, 124 Avenue des Allies, Louvain, Belgium, Secretary-General.

INTERNATIONAL CONGRESS ON HYDATID DISEASE, Santiago, Chile, Nov. 21-24. Organizing Committee, P. O. Box 9183, Santiago, Chile.

INTERNATIONAL CONGRESS OF INTERNAL MEDICINE, Friends House, London, N.W.1, Eng. Sept. 15-18. Sir Harold Boldero, 12 Pall Mall East, London, S.W.1, England, Secretary.

INTERNATIONAL CONGRESS ON MEDICAL RECORDS, London, England, Sept. 7-12. Miss Gwen Perkins, 120 C Street S.E., Washington, D. C., Chairman.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, Montevideo, Uruguay, March 1-7. Dirreccion General del Servico de Sanitad Militar, 8 de Octubre y Mariano Moreno, Montevideo, Uruguay, Secretariat of the Congress.

INTERNATIONAL CONGRESS ON NEUROPATHOLOGY, Rome, Italy, Sept. 8-13. Dr. Armando Ferraro, 722 W. 168th St., New York, N. Y., U. S. A., Secretary General.

INTERNATIONAL CONGRESS OF OTORHINOLARYNGOLOGY, Amsterdam, Netherlands, June 8-15. Dr. W. H. Struben, J. J. Viottastraat 1, Amsterdam, Netherlands, Secretary.

INTERNATIONAL CONGRESS OF PHYSICAL MEDICINE, London, England, July 14-19. Dr. A. C. Boyle, 45, Lincoln's Inn Fields, London, W.C.2, England, Hon. Secretary.

INTERNATIONAL CONGRESS OF UROLOGY, The Waldorf-Astoria, New York, N. Y., U. S. A., Sept. 15-18. Dr. John A. Taylor, 2 East 54th St., New York, N. Y., U. S. A., Secretary-General.

INTERNATIONAL HOSPITAL CONGRESS, London, England, May 25-30. Capt. J. E. Stone, 10 Old Jewry, London, EC2, England, Hon. Secretary.

INTERNATIONAL SOCIETY OF GEOGRAPHIC PATHOLOGY, Liège, Belgium, July 15-18. Dr. Fred C. Roulet, Habelstr. 24, Basel, Switzerland, Secretary General.

INTERNATIONAL UNION AGAINST TUBERCULOSIS, Rio de Janeiro, Brazil, Aug. 24-27. Prof. Etienne Bernard, 66 Blvd. St. Michel, Paris 6e, France, Secretary-General.

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION, Vichy, France, Sept. 12-16.

NEURORADIOLOGIC SYMPOSIUM, Stockholm, Sweden, Sept. 17-20. Docent Ake Lindbom, Symposium Neuroradiologicum, Serafimerlasarettet, Stockholm K., Sweden, Secretary.

WORLD CONGRESS OF JEWISH PHYSICIANS, Jerusalem, Israel, Aug. 10-14. Secretariat: % Israel Medical Association, Rehov Mesilat Yesharim, Beth Kovatz, Jerusalem, Israel.

WORLD CONGRESS OF MEDICINE, Montecatini, Italy, Oct. 16-18. Secretariat: Corso Trieste, 65, Rome, Italy.

WORLD FEDERATION OF MENTAL HEALTH, Brussels, Belgium, Aug. 25-Sept. 1.

WORLD MEDICAL ASSOCIATION, Athens, Greece, Oct. 12-16. Dr. Louis H. Bauer, 2 East 103d St., New York 29, N. Y., Secretary General

EXAMINATIONS AND LICENSURE

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Part I*, September. All centers where there are five or more candidates. Exec. Sec., Dr. John P. Hubbard, 225 S. 15th St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral.* Swampscott, Mass., Sept. 28-Oct. 1. Sec., Dr. C. B. Hickcox, 80 Seymour St., Hartford 15.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written.* Various Centers, September 1953. Final date for filing applications was May 1. All candidates are now required to take the written examination. *Oral.* Philadelphia, October 1953. Ex. Sec., Miss Janet Newkirk, 66 East 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Various centers and overseas, Oct. 20. Closing date for the acceptance of applications for the written examination was May 1. *Oral.* San Francisco, Sept. 3-6; Philadelphia, Nov. 13-14 and Washington, D. C., Nov. 17-18. Exec. Sec.-Treas., Dr. William A. Werrell, 1 West Main Street, Madison 3.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written.* Various Centers, Feb. 6, 1953. Final date for filing applications is Nov. 1. Sec., Dr. R. L. Faulkner, 2105 Adelbert Road, Cleveland 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Written.* Various Centers, January 1953. Final date for filing applications was July 1. *Practical.* Chicago, Oct. 6-10 and New York City, June 6-10, 1953. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: The deadline for the receipt of applications for the 1953 Part II examinations is Aug. 15. Sec., Dr. Harold A. Sofield, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Written.* Chicago, Oct. 6-10. *Oral.* Chicago, Oct. 6-10 and April 21-25, 1953. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City.

AMERICAN BOARD OF PATHOLOGY: *Written and Oral.* Pathologic Anatomy and Clinical Pathology examination. Chicago, Oct. 9-11. Sec., Dr. William B. Wartman, 303 E. Chicago Ave., Chicago 11.

AMERICAN BOARD OF PEDIATRICS: *Oral.* Chicago, Oct. 24-26; Boston, late November. Exec. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PREVENTIVE MEDICINE AND PUBLIC HEALTH: Cleveland, Oct. 18-20. Sec., Dr. E. L. Stebbins, 615 N. Wolfe St., Baltimore.

AMERICAN BOARD OF PROCTOLOGY: *Oral and Written.* Philadelphia, Sept. 27-28. Sec., Dr. Louis A. Buie, 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: New York City, Dec. 15-16. Final date for filing applications is Sept. 15. Sec.-Treas., Dr. David A. Boyd, Jr., 102-110 Second Ave. S.W., Rochester, Minn.

AMERICAN BOARD OF RADIOLOGY: *Oral.* Dec. 1-7. Final date for filing application was June 1. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written.* Various Centers. October 1952. Final date for filing application is July 1. Sec., Dr. J. Stewart Rodman, 225 15th St., Philadelphia.

BOARD OF THORACIC SURGERY: *Written.* Various Centers, Sept. 5. Sec., Dr. William M. Tuttle, 1151 Taylor Ave., Detroit 2.

DEATHS

Seeger, Stanley Joseph ✠ Dallas, Texas. Chairman of the Council on Industrial Health of the American Medical Association from the time of its organization in 1937 until 1947, died in New York, June 20, aged 62. Dr. Seeger was born at Manitowoc, Wis., June 21, 1889. He received his M.D. degree from Northwestern University Medical School in Chicago in 1911 and became an intern at Michael Reese Hospital, serving until 1913. On April 21, 1915, he entered the Mayo Foundation, University of Minnesota in Rochester, as a fellow in surgery and left on April 1, 1917 from which time until 1941 he was engaged in the practice of surgery in Milwaukee. He served on the faculty of Marquette University School of Medicine, and from 1934 to 1941 was chief-of-staff of Milwaukee Children's Hospital, where in 1944 the amphitheater was named in his honor. He was also chief-of-staff of Columbia Hospital from 1938 to 1941 and was attending surgeon at the Evangelical Deaconess and Johnston Emergency hospitals. Dr. Seeger was Vice-President of the American Medical Association in 1944-1945. He was a president of the State Medical Society of Wisconsin, the Milwaukee County Medical Society, and the Alumni Association of the Mayo Foundation; also a member of the founders group of the American Board of Surgery, a member of the Western Surgical Association, Wisconsin Clinical Surgical Club, Milwaukee Academy of Medicine, American Association for the Surgery of Trauma, Milwaukee Surgical Society, and the Industrial Medical Association, and a fellow of the American College of Surgeons. In 1936 he received the master of science degree in anatomy from Marquette University. From August, 1918, to February, 1919, Dr. Seeger served in the medical corps of the U. S. Army, first at Fort Oglethorpe, Ga., then at Camp Custer, Mich., and at the Detroit General Hospital.

In 1937 the Northwestern University Alumni Association presented him with an award of merit "in recognition of achievement which reflected credit on Northwestern University and her alumni." He was a consultant to the division of industrial hygiene of the National Institute of Health, and president of the William Buchanan Foundation in Texarkana, Texas. Dr. Seeger had done research on the treatment of burns, congenital arteriovenous anastomoses, transfusion, and pediatric surgery. He contributed many papers to medical literature on clinical subjects and other papers relating to medical education, industrial health, and the social aspects of medicine. He was president and director of a number of oil companies and director of the Texarkana National Bank and the First National Bank of Dallas.

Symmers, Douglas, New York; born in Columbia, S. C., Sept. 17, 1879; Jefferson Medical College of Philadelphia, 1901; professor emeritus of pathology at New York University College of Medicine; instructor in pathology in 1907 and professor from 1911 to 1918, Bellevue Hospital Medical College; instructor in pathology at Cornell University Medical College from 1908 to 1911 and later assistant professor of pathologic anatomy; member of the American Association of Pathologists and Bacteriologists and the International Association of Medical Museums; fellow of the New York Academy of Medicine; past president of the New York Pathological Society; director, division of laboratories, department of hospitals, New York City; assistant pathologist, New York Hospital from 1908 to 1913; consulting pathologist for Englewood (N. J.) Hospital, Beekman Downtown Hospital and the University Hospital; editor of Ziegler's "General Pathology," fifth American edition, in 1921; died in Bellevue Hospital April 19, aged 72, of arteriosclerosis and mesenteric embolism.

Quackenbos, Harrie Maxwell, Colony, Va.; born in Hartford, Conn., April 12, 1888; Jefferson Medical College of Philadelphia, 1914; L.R.C.P., London and M.R.C.S., England, 1916; member of the American Psychiatric Association; formerly house surgeon and clinical assistant at the Hospital for Sick Children in London, senior resident officer and superintendent of the Taunton and Somerset Hospital in Taunton, England, and senior resident officer at Queen Mary's Hospital in London; at one time medical officer of health, Woodgreen, Urban District Council, London; served as assistant attending physician at the Broad Street Hospital in New York, and as senior resident physician at the New Jersey State Hospital in Trenton, N. J.; since 1949 clinical director of the Lynchburg State Colony; died March 31, aged 63, of primary carcinoma of the lung.

Carter, Rupert Franklin ✠ New York; born in Holly Springs, N. C., May 18, 1894; Columbia University College of Physicians and Surgeons, New York, 1918; professor of clinical surgery at the Post-Graduate Medical School of the New York University-Bellevue Medical Center; member of the founders group of the American Board of Surgery; member of the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons; fellow of the American College of Surgeons; in 1921 organized the medical department of *New York Times,* and for many years served as its director; co-author of "Diagnosis and Management of Diseases of the Biliary Tract"; attending surgeon, University Hospital and St. Clare's Hospital; visiting surgeon, fourth surgical division, Bellevue and Gouverneur hospitals; chairman of the medical board, Leroy Hospital, where he died April 19, aged 57, of bronchopneumonia.

Church, Archibald ✠ Pasadena, Calif.; born in Fond du Lac, Wis., March 23, 1861; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1884; an Associate Fellow of the American Medical Association and chairman of its Section on Nervous and Mental Diseases, 1918-1919; past president of the Chicago Medical Society; member of the Illinois State Medical Society and the American Psychiatric Association; formerly practiced in Chicago, where he was professor of nervous and mental diseases in the Northwestern University Medical School, where a medical library was named in his honor; formerly affiliated with St. Luke's, Mercy, Michael Reese, and Wesley Memorial hospitals in Chicago; joint author with Dr. Peterson of a text book on "Nervous and Mental Diseases"; died May 8, aged 91, of diverticulitis.

Bradley, James Albert ✠ St. Petersburg, Fla.; University of Pennsylvania School of Medicine, Philadelphia, 1927; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; formerly on the faculty of the University of Texas School of Medicine in Galveston, and the Louisiana State University Medical Center in New Orleans; served during World War II; consultant in cardiology, Veterans Administration Center in Bay Pines; member of staff, Mound Park Hospital; on the associate staff, St. Anthony's Hospital; died aboard ship in the Caribbean April 16, aged 52.

Case, Eugene Allen ✠ Lansdowne, Pa.; born in New Albany, Ind., Nov. 14, 1877; Medico-Chirurgical College of Philadelphia, 1908; emeritus professor of morbid anatomy, the Medico-Chirurgical College, Graduate School of Medicine, University of Pennsylvania; specialist certified by the American Board of Pathology; member of the American Association of Pathologists and Bacteriologists and the College of American Pathologists; fellow of the American College of Physicians; affiliated with Delaware County Hospital in Drexel Hill, where he died April 20, aged 74.

Armen, Kachig Hovanes ✠ Columbus, Ohio; Starling-Ohio Medical College, Columbus, 1909; affiliated with Mercy Hospital, St. Francis Hospital and Grant Hospital, where he died April 14, aged 70, of coronary thrombosis.

Bader, George Bernard, Washington Depot, Conn.; Columbia University College of Physicians and Surgeons, New York, 1920; specialist certified by the American Board of Pediatrics; served during World War II; for many years on the faculty of his alma mater; formerly on the staff of Babies Hospital in New York; died in St. Luke's Hospital, New York, April 18, aged 56, of coronary disease.

✠ Indicates Member of the American Medical Association.

Bier, Joseph, New York; Long Island College Hospital, Brooklyn, 1907; died recently, aged 66, of coronary occlusion.

Blew, Edgar Maule, Upper Darby, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1914; served during World War I: psychiatric examiner at Allentown Induction Center during World War II; instructor in psychiatry at his alma mater; for many years on the staff of the Allentown (Pa.) State Hospital; on the consulting staff of Sacred Heart Hospital in Allentown, where he died April 3, aged 70, of cerebral hemorrhage.

Blumen, David ✦ Brooklyn; New York University College of Medicine, New York, 1937; also a graduate in dentistry; died recently, aged 48, of coronary thrombosis.

Bock, Charles Aloysius, Wexford, Pa.; University of Maryland School of Medicine, Baltimore, 1935; died in Presbyterian Hospital, Pittsburgh, recently, aged 46, of lymphosarcoma.

Butler, Thomas Bentley ✦ San Antonio, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1929; member of the American Academy of General Practice and the American Medical Association; served during World War II; affiliated with Santa Rosa, Nix Memorial, and Baptist Memorial hospitals; died March 24, aged 49, of a heart attack.

Clark, Wilbert B. ✦ Kenmore, N. Y.; Michigan College of Medicine and Surgery, Detroit, 1894; member of the American Medical Association and the Michigan State Medical Society; died March 30, aged 83, of acute myocardial infarction and coronary thrombosis.

Clement, Thomas Gage ✦ Healdsburg, Calif.; University of Colorado School of Medicine, Denver, 1910; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society, Radiological Society of North America and the American College of Radiology; served during World wars I and II; affiliated with Healdsburg General Hospital; formerly on the staffs of St. Charles Hospital in Aurora, Ill., and St. Luke's Hospital in Duluth, Minn.; died March 26, aged 65, of coronary occlusion.

Cowie, Charles Stuart, Arlington, Va.; Columbian University Medical Department, Washington, D. C., 1891; died recently, aged 85, of coronary thrombosis.

Howard, Abner Perry, Vernon, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1903; formerly city health officer; died recently, aged 81, of cancer of the stomach.

Irwin, Clyde Moran, Charlotte, Texas; University of Louisville (Ky.) Medical Department, 1909; died in Poteet recently, aged 68, of acute coronary occlusion.

Jandrain, Richard Raymond, Green Bay, Wis.; Marquette University School of Medicine, Milwaukee, 1930; died recently, aged 55, of coronary thrombosis.

Khorozian, Krikor G., ✦ Pineville, W. Va.; State University of Iowa College of Medicine, Iowa City, 1920; interned at Elkins (W. Va.) Hospital; served with the Chemical Warfare Division of the U. S. Army during World War I; author of "Microkaryocytes, the Fourth Corpuscles, and Their Functions"; nominated for honorary membership in the International Mark Twain Society; died March 22, aged 64, following a heart attack.

Kimura, Robert Akio ✦ Honolulu, Hawaii; St. Louis University School of Medicine, 1927; president of the Kuakini Hospital medical staff; died recently, aged 52, of carcinoma of the liver.

McLaughlin, Harry James, Bloomington, Wis.; St. Louis College of Physicians and Surgeons, 1908; died in Lancaster March 19, aged 75, of carcinoma of the bladder.

Maurer, Robert Noren, Harrington Park, N. J.; Yale University School of Medicine, New Haven, 1948; died recently, aged 27.

Maytum, Wellington James, Alexandria, S. D.; State University of Iowa College of Medicine, Iowa City, 1891; served during World War I; superintendent of schools, 1893-1894; formerly state senator; died in Veterans Administration Hospital, Fort Meade, March 24, aged 87, of hemorrhage and gastric ulcer.

Petersen, Alfred ✦ Brooklyn; Hamburgische Universität Medizinische Fakultät, Hamburg, Germany, 1920; died recently, aged 57.

Pettigrew, Richard R., Cleveland; Long Island College Hospital, Brooklyn, 1898; Harvard Medical School, Boston, 1900; died recently, aged 80.

Rabe, Rudolph Frederick, Madison, N. J.; New York Homeopathic Medical College and Hospital, New York, 1896; formerly on the faculty of his alma mater; died March 18, aged 80, of virus pneumonia.

Ray, Samuel Philip, Leaksville, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1929; past president of the Rockingham County Medical Society; died March 28, aged 49, of coronary thrombosis.

Redmond, Maurice Snowden, Pittsburgh; University of Pittsburgh School of Medicine, 1913; served during World War I; affiliated with Roselia Foundling and Maternity Hospital and St. Francis Hospital; died April 16, aged 63, of acute coronary occlusion.

Reynolds, Marion Stuckey, Alhambra, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1891; formerly practiced in Columbus, Ohio, where she was superintendent of the Children's Hospital and affiliated with Columbus State Hospital; died April 13, aged 82.

Ridenour, David C. ✦ Peru, Ind.; Starling Medical College, Columbus, 1892; member of the American Medical Association; served as secretary of the board of health, and as coroner; affiliated with Miami County Hospital; died at Rochester (Ind.) Nursing Home April 25, aged 83, of cardiovascular renal disease.

Riggle, Oliver ✦ Lodi, Calif.; University of Michigan Homeopathic Medical School, Ann Arbor, 1919; died April 19, aged 58, of cerebral hemorrhage and arteriosclerosis.

Roche, Thomas Joseph ✦ Bridgeport, Conn.; College of Physicians and Surgeons, Baltimore, 1911; also a graduate in pharmacy; member of the American Medical Association; fellow of the American College of Surgeons; affiliated with Bridgeport Hospital; died April 30, aged 68, of hypertensive arteriosclerosis.

Rose, Alwyn F., North Andover, Mass.; Harvard Medical School, Boston, 1899; also a graduate in pharmacy; died April 3, aged 82, of cerebral hemorrhage.

Ruark, Rudy Elois, Henderson, Ky.; University of Tennessee College of Medicine, Memphis, 1942; served during World War II; company physician for the DuPont Plant in Chattanooga, Tenn.; died March 4, aged 34.

Sanders, John Summerfield ✦ Leland, Miss.; Memphis (Tenn.) Hospital Medical College, 1900; member of the American Medical Association; at one time vice-president of the Mississippi State Medical Association; formerly practiced in Coffeeville, where he had been county health officer and president of Yalobusha County Medical Society; died April 9, aged 74.

Saxon, Leo ✦ Chicago; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Prussia, Germany, 1921; member of the American Medical Association; affiliated with American Hospital and Alexian Brothers Hospital, where he died April 29, aged 59, of coronary disease.

Snedden, Alexander Ross ✦ McKeesport, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1904; specialist certified by the American Board of Radiology; member of the American Medical Association, Radiological Society of North America, and the American College of Radiology; affiliated with McKeesport Hospital; died March 31, aged 72, of heart disease.

Sutherland, William Sassaman ✦ Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1923; clinical professor of ophthalmology at his alma mater; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology; on the staff of Hahnemann Hospital, where he died March 14, aged 55, of acute myocardial infarction and diabetes mellitus.

GOVERNMENT SERVICES

DEPARTMENT OF DEFENSE

Inspection of Research Facilities.—The Committee on Medical Sciences of the Department of Defense Research and Development Board made a seven day tour by airplane of military medical research facilities beginning June 23. The objective was to gather information on the location, physical structure, organization, command, special equipment, and personnel of each of the following facilities: Medical Nutrition Laboratory, Chicago; Naval Research Unit 4, Great Lakes, Ill.; Aero Medical Laboratory, Dayton, Ohio; Medical Department Field Research Laboratory, Fort Knox, Ky.; Naval School of Aviation Medicine, Pensacola, Fla.; and the Orlando Laboratory, Bureau of Entomology, Department of Agriculture, Orlando, Fla.

Committee members who made the trip were the chairman, Dr. Lowell T. Coggeshall, University of Chicago; Dr. Franklin C. McLean, University of Chicago; Dr. Frank B. Berry, Columbia University, New York; Dr. Wallace O. Fenn, University of Rochester, New York; Dr. William S. McCann, Strong Memorial Hospital, Rochester, New York; and Dr. Douglas D. Bond, Western Reserve University, Cleveland. Committee members from the military departments and several members of the staff of the committee also made the trip.

Personal.—Dr. F. Lloyd Mussells has been appointed executive director of the Committee on Medical Sciences, Research and Development Board, Department of Defense, succeeding Dr. Thomas B. Spencer who has joined the Cornell Medical Center in New York City as director of the outpatient department of the New York Hospital and as instructor in medicine at the College of Medicine, Cornell University. Dr. Mussells is on a two year leave of absence from Strong Memorial Hospital, University of Rochester, New York.

NAVY

Course in Special Weapons and Radioactive Isotopes.—A six day course in medical aspects of special weapons and radioactive isotopes will convene on Aug. 4 at the Naval Medical School, Bethesda, Md. Primarily conducted for the benefit of inactive reserve medical department officers, a limited number of medical department officers on active duty may be given "authorization orders" at no expense to the government to attend.

Inactive reserve medical, dental, medical service corps, and nurse corps officers residing in the 1st, 3rd, 4th, 5th, 6th, 8th, 9th Naval Districts and Potomac River Naval Command who desire to attend this course should submit request for the training to the commandant of their respective naval district at the earliest practicable date. Officers of the medical department on active duty must submit their requests for this course of instruction in accordance with current directives for temporary additional duty orders.

AIR FORCE

Class in Flight Medicine Graduates.—Nineteen student officers graduated from a new and expanded course in the basic elements of flight medicine June 28 at the School of Aviation Medicine, Randolph Field, Texas. The class, which matriculated last October, is the first to be graduated in the basic course since the outbreak of the war in Korea. While some of the graduates have been assigned to duty overseas, nine of them have been selected for a second year of clinical work in residency at the School of Public Health and Hygiene of Johns Hopkins University in Baltimore. This additional year in a civilian medical college is one of the important features of the new training program for flight surgeons. The officers chosen have devoted themselves to aviation medicine as a career. They have agreed to serve a total of at least five years in the Air Force. With further study and research, they will have an opportunity to qualify as specialists in this branch of medicine.

Personals.—Col. Nuel Pazdral has arrived at headquarters, Crew Training Air Force, Randolph Field, Texas, to assume his duties as air surgeon of the new command. His previous assignment was at Elmendorf Air Force Base, Alaska.——Dr. Michael Coss, professor of otolaryngology at the University of Iowa and consultant to the Surgeon General of the Air Force, has been on a world-wide tour of Air Force hospitals. He recently lectured at the 67th U. S. Air Force Hospital on definitive treatment and facial surgery before Air Force physicians serving in all parts of Korea.

PUBLIC HEALTH SERVICE

Hygiene of Aging Program.—A hygiene of aging program is being established in the Public Health Service, Surgeon General Leonard A. Scheele announces. The program will be operated by the division of chronic disease and tuberculosis of the Bureau of State Services. Dr. Cletus L. Krag, former research assistant of the division of gerontology, Washington University School of Medicine, will direct the program.

Dr. Scheele said, "The increase in our population of those past 65 years of age—three million in 1900 compared with around 13 million today—will mean that more health services will be needed for older persons. Increased emphasis will have to be placed on preventing and alleviating the ills of older adults and on helping them play a more active role in the community. Health agencies can do a great deal toward making the later years happier and more productive. Many health departments are beginning to recognize this responsibility by offering health guidance for older people." The purpose of the hygiene of aging program, the Surgeon General indicated, is to advise health departments on the development of these activities. The program is also designed to help health departments consider the needs and problems of the aging group in all their programs.

Health Conditions in Uranium Mines.—A study of occupational health conditions in the uranium industry, conducted by the Public Health Service and the Colorado State Department of Public Health with the full cooperation of the industry, has been under way since 1950. Physical examinations of over 1,100 workers in uranium mines and mills in Colorado, Utah, New Mexico, and Arizona have revealed no evidence of health damage from radioactivity, according to an interim report to the industry released by the Public Health Service. Dr. Seward E. Miller, Chief, Public Health Service Division of Occupational Health, who is in charge of the study, pointed out that these are interim findings and that the study is expected to continue for several years. The miners and millers will be reexamined periodically, and continued checks will be made of the working environment.

Commenting on the report, the Surgeon General, said, "In the course of this study, several potential health hazards were discovered by Public Health Service investigators, and recommendations for their elimination have been made to the operators of the uranium mines and mills. Many of these measures have already been instituted by the industry." Cooperating with the Public Health Service and the Colorado State Department of Public Health in this study are the Atomic Energy Commission, the U. S. Bureau of Mines, the Los Alamos Scientific Laboratory, the Navy Radiological Defense Laboratory, the U. S. Bureau of Standards, and the state health departments of Utah, New Mexico, and Arizona.

Reports on Water Pollution in Drainage Basin Areas.—The available facts regarding pollution in 226 United States river basins have been published in a series of 15 cooperative state-federal reports. A summary of the data in these area reports, "Water Pollution in the United States," has been issued to give the pollution picture for the nation as a whole. The drainage basin reports provide, for the first time, the names of the cities and industries that are creating pollution and thus are responsible for its abatement. The reports are being made available, principally through the official state water pollution control agencies, to the people in the local communities who are the ones who must take the steps necessary for the solution of their own problems.

Persons interested in developing community action programs for local abatement projects may obtain copies of the national report and the drainage basin report for their particular area through their state water pollution control agency or the Division of Water Pollution Control, U. S. Public Health Service, Washington, D. C.

A list of the reports in the water pollution series follows:

Number	Title
1	Water Pollution in the United States
2	Tennessee River Drainage Basin
3	Missouri River Drainage Basin
4	Great Basin Drainage Basins
5	California Drainage Basins
6	Pacific Northwest Drainage Basins
7	New England Drainage Basins
8	Western Gulf Drainage Basin
9	Colorado River Drainage Basin
10	North Atlantic Drainage Basins
11	Lake Erie Drainage Basin
12	Ohio River Drainage Basin
13	Southeast Drainage Basins
14	Western Great Lakes Drainage Basin
15	Upper Mississippi Drainage Basin
16	Southwest-Lower Mississippi Drainage Basin

Toxoplasmosis.—A recent report on toxoplasmosis, comprising 105 pages and 91 illustrations, published by the U. S. Public Health Service, presents clinical histories of five infants who died and two surviving infants with toxoplasmosis, along with autopsy findings in four of the fatal cases. The cases described were selected from a group observed during a three year period in hospitals associated with the University of California Medical School. The authors of "Toxoplasmosis" are Pacob K. Frenkel, M.D., National Institutes of Health, Public Health Service, and Saul Friedlander, M.D., Sacramento, Calif.

The authors state that an acute infection may produce symptomatic visceral and central nervous system lesions in fetuses, infants, and occasionally in children and adults. The infection may pass unnoticed in adults and probably in many children, whose resistance is relatively high. With the development of neutralizing antibodies, the visceral lesions subside and most organisms disappear. Sometimes Toxoplasma persist, giving rise to subacute and chronic infection, especially in the central nervous system and the eye. Toxoplasma cysts may remain also in the heart and skeletal muscle, resulting in a carrier state. It would be difficult to determine the actual incidence of clinical toxoplasmosis in this country, inasmuch as many cases undoubtedly go unrecognized and others are not recorded. However, it is likely that most adults in the United States become infected once in their lifetime. Symptoms of the infection are slight and unrecognized in most instances. Copies of "Toxoplasmosis" may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. The price is fifty cents.

Clearinghouse on Morbidity Statistics Projects.—A clearinghouse for collection of information on studies and surveys of morbidity has been established as an aid to public health workers and others interested in disease, injury, and impairment statistics. It is under the auspices of the Public Health Conference on Records and Statistics. The organization's membership is made up chiefly of representatives from state and large city health departments, voluntary health associations, and the Public Health Service.

The clearinghouse has two major objectives: (1) to provide a systematic method of telling workers in the public health and medical field where specific data on human morbidity may be secured; (2) to afford a means whereby those planning studies or surveys involving the measurement of illness, disease, injuries, or impairments can get in touch with others who have undertaken similar tasks. For a project to be included in the clearinghouse listings it must satisfy the following criteria: 1. It must be concerned with statistics of illness, disease, injuries, or impairments; 2. It must have a valid population base so that rates of incidence, prevalence, and so forth, may be stated for the whole of the population studied. Projects based entirely on data from the notifiable disease reporting system will be excluded because of the ready availability of such data. Inquiries may be directed to: Clearinghouse on Current Morbidity Statistics Projects, % Division of Public Health Methods, Public Health Service, Washington 25, D. C.

Appoint Chief of Clinical Research.—The Surgeon General has announced the appointment of Dr. Norman B. McCullough as chief of clinical research at the Microbiological Institute of the National Institutes of Health, Bethesda, Md. The newly established unit will conduct clinical investigations in infectious and tropical diseases at the clinical center, now under construction and scheduled to open in the spring of 1953.

Prior to his appointment, Dr. McCullough was in charge of brucellosis research at the Microbiological Institute. His work in brucellosis will continue. Dr. McCullough was born in Michigan. He received his B.S. degree in chemistry at Michigan State College in 1932 and his M.S. degree in bacteriology a year later. His Ph.D. in bacteriology was earned at the University of Chicago in 1937, and in 1944 he was awarded his M.D. by that institution. From 1946 to 1947, he was on active duty with the U. S. Army Medical Corps.

New Federal Research Grants.—The Public Health Service announces that during the first half of the current fiscal year 249 new research grants have been made to universities, hospitals, medical and dental schools, and other nonfederal research institutions to help support medical and scientific research activities. The grants were made by the Surgeon General through the National Cancer Institute, the National Heart Institute, the National Institute of Arthritis and Metabolic Diseases, the National Institute of Dental Research, the National Institute of Mental Health, the National Institute of Neurological Diseases and Blindness, the National Microbiological Institute and the Division of Research Grants of the National Institutes of Health.

The awards were made on the recommendation of the seven national advisory councils, established by the Congress, to advise the Public Health Service in the field of research grants. The councils consist of medical authorities and representatives of the public. In addition to the new research projects, totaling $2,188,699, a total of 228 renewal grants were for the continuation of scientific studies currently under way.

Fly, Mosquito, and Rodent Control.—The Communicable Disease Center of the Public Health Service has issued manuals on fly, mosquito, and rodent control during emergencies. Although the manuals were designed for peacetime public health use, the Civil Defense Administration says they are "equally applicable to civil defense disaster relief operations." State and local health departments may get copies of the manuals from regional offices of the Public Health Service. State and local civil defense agencies may get them by writing to the Officer in Charge, Communicable Disease Center, U. S. Public Health Service, 50 Seventh St., N. E., Atlanta 5, Ga.

MISCELLANEOUS

Send Biochemists to International Congress.—Nineteen American biochemists have received travel grants from the National Science Foundation to attend the Second International Congress of Biochemistry in Paris, France, July 21 to July 27. Eight grants were awarded to young biochemists from a special list of 100 applicants, while the remaining 11 grants were awarded to senior biochemists selected on the basis of their contributions to research in biochemistry. In making the selections the foundation was guided by the recommendations of a special committee appointed by the American Society of Biological Chemists and endorsed by the Biological Chemistry Division of the American Chemical Society.

FOREIGN LETTERS

BRAZIL

Hypernephroid Tumor of the Ovary.—A case of primary tumor of the ovary, the structure of which was similar to the adrenal cortex, is reported by Drs. Carmen Escobar Pires, Altino Antunes, and Carlos Ribeiro Macedo. The designation of hypernephroid tumor is used by them because of its similarity to the adrenal cortex and because of its masculinizing effects, since the so-called hypernephroma or Grawitz's tumor does not have the same hormonal effects.

A 39-year-old woman had been treated for diabetes mellitus for two years and since then noticed growth of hair on her face and body, baldness (male alopecia), hoarseness of voice, and an abdominal tumor. These conditions became worse a year ago, and she was admitted to the hospital with acidosis, marked undernourishment, and glycosuria. She was operated on, and a bilateral ovarian tumor was found. Five months later, there was noted decrease of hair on the face and body, disappearance of baldness, but no improvement in diabetes mellitus. The patient neglected her health and died during a diabetic coma one and a half years after the operation, no recurrence of the tumor being found.

The main symptoms studied included defeminization and masculinization, high blood pressure, diabetes mellitus, and polycythemia. In this case two rare facts are pointed out, mainly the bilateral tumor and its association with uterine myoma, the last one accounting for irregular bleeding, and the marked masculinizing effects noticed although amenorrhea started only five months before the operation. Hormonal assays showed marked decrease of gonadotrophins and increase of estrogens and of 17-ketosteroids. Finally, the physicians state that it is not possible, so far, to determine the real origin of those tumors.

Female Urethral Diverticulum.—A number of articles have been published lately on the pathology of female urethra and particularly on female urethral diverticulum as discussed by Dr. Geraldo V. de Azevedo. He is of the opinion that to avoid confusion the term "urethrocele," used by many as synonymous with diverticulum, should not be encouraged, since some authors use it for other conditions. Classification of congenital diverticula in true diverticulum and pseudodiverticulum is quoted. Pathogenesis of acquired diverticula is minutely studied, and Dr. Geraldo V. de Azevedo favors dilation of urethral glands as the most important factor. A case of calculus in the interior of the diverticulum is reported. Symptoms are discussed as well as diagnosis, urethrography being favored by him as the only method for a correct diagnosis. Conservative and surgical treatments are taken up by Dr. Geraldo who uses a special cannula for urethrovesical instillations. Whenever possible surgery should be indicated, diverticulectomy being the method of choice. Stoeckel and other authors advise the shelling out of the diverticulum instead of the excision. He reports a series of 10 cases, illustrated with urethrograms. In six cases diverticulectomy was carried out, in one a calculus was removed from the diverticulum, and in three only local conservative treatment was used.

Metastasis of Hypernephroma to the Thyroid Gland.—In a review of the literature, Drs. Nicolau Morais Barros Filho and Alvaro Dino de Almeida found 23 cases of metastasis of hypernephroma of the thyroid gland. To this series a personal case is added, which is herewith presented in detail. A woman, aged 58, had a small, old, nodular goiter, which three months before admission had rapidly increased in size, invading the adjacent structures and producing progressive symptoms of compression of the esophagus and of the trachea. Besides the cervical tumor, which was formed by the enlarged thyroid gland, physical examination showed an abnormal resistance on the right upper quadrant of the abdomen, which was erroneously attributed to the enlarged liver. There were no complaints related to the urinary apparatus. With a clinical diagnosis of malignant tumor originating in the thyroid gland, palliative surgical removal was indicated with the purpose of alleviating the patient of the symptoms due to local compression.

At operation, the tumoral mass that had originated on the right lobe of the thyroid was removed together with all the invaded structures adjacent to it (prethyroid and sternomastoid muscles, a segment of skin, the internal jugular vein, and lymph nodes). The right carotid artery, involved by the tumor, had to be dissected in its entire length and at the end of the operation was found to have had its walls weakened and thinned as a consequence of neoplastic invasion. A complementary tracheostomy was performed. Postoperative course was uneventful for four days, during which the patient was completely relieved of all of her symptoms, but on the fifth day a sudden hemorrhage occurred owing to rupture of the carotid artery, producing the patient's death in a few seconds. At autopsy, a hypernephroma of the right kidney was found with metastasis in the thyroid (surgical specimen), in the right lung, and in lymph nodes (periaortic, left supraclavicular, and on both sides of the neck).

The authors call attention to the difficulties involving the diagnosis, and they stress the importance of always having in mind the possibility that a malignant tumor of the thyroid gland might not be primary but metastatic. Regarding treatment, which is necessarily surgical, it is usually indicated only for palliation.

New Radiological Sign in Cholecystography.—Dr. José Vitor Rosa presented a new radiological sign to be observed during cholecystography with the patient standing up. Owing to the closing of the Oddi's sphincter, the increased pressure in the common duct plus the secretory pressure result in the refilling of the gallbladder. The picture thus obtained shows the bile in the gallbladder separated in two layers: one is opaque from the dye, dense, located in the lower part of the gallbladder; the other layer is almost entirely free of dye, it appears to be overlying the first layer, and a level line is seen between the two layers. Dr. José Vitor Rosa called this the "closed Oddi's sign." He believed that the early appearance of this sign during the test with Boyden meal is significant of hypertonicity of Oddi's sphincter.

ITALY

Ferrara Academy of Sciences.—At a meeting of the Ferrara Academy of Sciences Dr. Rietti reported on untoward effects of intravenous administration and excess dosage of thiamine (vitamin B_1) and cited as an example the case of a patient who died after receiving 10 mg. of thiamine intravenously.

According to the speaker, it is possible that death may occur in certain ways in patients who receive small doses of thiamine and in other ways in those who receive doses of from 50 to 100 mg. intravenously. In the former, death may be due to anaphylactic shock; in the latter, it may be due to toxic accidents secondary to an increased breaking down of pyruvate in the liver and other tissues and a disturbed Krebs' cycle of the citric acid. Massive doses of thiamine, in addition to being dangerous, can be useless, because they are rapidly eliminated through the kidneys. Often it is not a question of the dosage but of the necessity to check endogenous disturbances that oppose the phosphorylation of thiamine, such as scarcity of phosphoric acid, adrenocortical insufficiency, or other disturbances.

Dr. Rietti did not wish to discourage or confine the therapeutic use of thiamine because sometimes there are subclinical and asymptomatic deficiencies of this vitamin. But in most cases oral administration of moderate doses is sufficient. If parenteral administration is performed, thiamine should be injected into the muscles slowly, letting the patient rest afterward for about one hour. Intravenous injection of massive doses of thiamine is indicated only in fulminant cardiac cases of beriberi.

The items in these letters are contributed by regular correspondents in the various foreign countries.

Drs. Tria and Barnabei studied a factor present in the liver that activates alcoholic fermentation. Autolysed liver extracts were prepared, which increased fermentation as much as seven or eight times, as measured by carbon dioxide production under certain conditions. The factor is dialyzable, resistant to acid or alkaline hydrolysis even at 120 C, is not inactivated by nitrous acid, and can be absorbed by animal carbon. The mechanism of action of this element consists mainly in speeding up the development of Saccharomyces organisms.

Drs. Ortolani and Nonato reported three typical cases of Bonnevie-Ullrich syndrome that occurred in two girls and a 4-year-old boy who had bilateral pterygium colli associated with the various typical anomalies of this syndrome. All the patients showed inadequate body development, and roentgenograms revealed skeleton alterations in two of them.

Dr. Ortolani described a fetus with two heads, two complete laterally united thoraxes each with two arms, and a single abdomen. The viscera, partly protruding like hernias into the thoracic cavity through a single incomplete diaphragm, were a single liver, a single spleen, and a single pancreas, whereas the gastrointestinal tract was double as far as the ileum and became single in the last 15 cm., continuing thus in the cecum, the appendix, and the colon, and ending in an ampulla of the rectum with atresic anal orifice. One urinary apparatus was entirely developed, whereas the other had two rudimentary kidneys partially fused in the middle. The same was true of the genital apparatus with the external genitals of a man. Multiple deformities were present in both hearts. The monster lived for 17 hours after birth.

Drs. Muratori and Nanetti reported on the studies they made by injecting diluted India ink in the blood flow in the marrow of the long bones of a guinea pig, a mouse, and a child. They observed that venous capillaries and sinusoids, largely anastomosed, prevail among the blood vessels of the bone marrow, and the ends of a few thin arteries open into these. The ends of the arteries have the structures of blood capillaries, and therefore the presence of true and real arteriovenous anastomoses is excluded. The blood vessels that run in the haversian canals of the compact shaft of the bone anastomose with a venous plexus under the endosteum that, in turn, is in direct relation with the venous vessels of the marrow.

Dr. Remelli studied changes in striated muscle fibers in arthritis following large and prolonged doses of desoxycorticosterone. Histological investigations of the muscle revealed hyaline degeneration in some fibers and initial waxy metamorphosis with accumulation of sarcoblasts in the sarcolemma. All the specimens showed a pronounced nuclear proliferation that seemed accentuated by a moderate reaction of the connective tissue, which was pronounced in the perivascular position.

Surgery of Sympathetic Nervous System in Vascular Disease of Brain.—At the 14th Convention of the International Society of Surgery in Paris, Professor Chiasserini, chief surgeon of the hospitals of Rome, pointed out that insufficient vascularization aggravated by vasospasm is one of the main factors in cerebral diseases. Operations on the sympathetic system are directed toward preventing or eliminating vasospasm, thus improving circulation in the brain. The exceptions are a few attempts to treat some spastic paralyses of cerebral or spinal origin by means of cervical or lumbar sympathectomies. Professor Chiasserini performed some sympathectomies in patients with spastic paraplegia of spinal origin, but his results were rather poor.

Blocking of the cervical sympathetic nerve and irrigation of the superior cervical ganglion with procaine hydrochloride before performing a cerebral angiography are well-known operations on the sympathetic nervous system aiming to prevent cerebral vasospasm. The speaker observed only 2 cases of transitory hemiparesis in about 300 arteriographies that he performed, almost always percutaneously, in his department.

The frequent, severe, and often fatal accidents secondary to ligation of a carotid artery for intracranial aneurysm are generally attributed to thrombosis, embolism, or softening of the ischemic area; but it is more probable that the ischemia is aggravated by a contemporaneous vasospasm. The number and severity of these complications appear to have decreased since blocking of the cervical sympathetic ganglion and ligation of the carotid artery "in phases" have been introduced.

As a rule, Professor Chiasserini performs section of the internal carotid artery gradually and successively following this procedure: (1) stenosis of the common carotid artery, by means of a streak of fascia or muscle; (2) double ligature of the internal carotid artery; and (3) section of the internal carotid artery. At each step, occurring at intervals of one and two days, respectively, procaine hydrochloride is injected into the vascular adventitia.

When the collapsed brain does not have a tendency to expand again, not even after intraventricular injections, (this happens mostly in old persons with hematoma not caused by trauma) one should think that, in addition to other lesions like cerebral atrophy, there is a pronounced vasospasm difficult to eliminate. Professor Chiasserini believes that in these cases one should resort directly to bilateral cervical sympathectomy where justified by the patient's condition or else to bilateral blockings with procaine hydrochloride repeated and completed by administration of eupaverin ($C_{19}H_{19}O_4N$).

The same procedure may be attempted in some post-traumatic and postencephalitic cerebral atrophies. The speaker has operated only on six such patients, and therefore an evaluation of the results is premature.

NORWAY

Merits and Faults of Norwegian Hospitals.—On Feb. 2 an address was delivered at a meeting of the Norwegian Medical Society entitled "Features of the Development of the Functions and Administration of Hospitals" by Dr. Karl Evang who is head of the Norwegian Public Health Service. By virtue of this post and the prestige he enjoys in the field of international medicine, Dr. Evang felt free to speak plainly about the faults as well as the merits of the Norwegian hospitals at the present time. They are, as a rule, "closed" in the sense that they are staffed by full-time physicians and are primarily concerned with intramural activities, such extramural activities as the supervision of patients after discharge being no obligatory concern of theirs. The treatment given at these hospitals shows no discrimination reflecting on the patient's finances. Indeed, much of the financing of these hospitals is undertaken by the state, by local authorities, or by semipublic institutions. Dr. Evang believes that the medical quality of the work of these hospitals, their diagnostic and therapeutic efficiency, compares favorably with conditions in other countries with approximately the same cultural level. "On the whole we administer our hospitals in Norway more cheaply, more effectively and with a simpler administration apparatus than most of the countries which have achieved just as high a medical standard as we have."

But Dr. Evang does not find that the Norwegian hospitals have kept pace with certain Anglo-Saxon and Slav countries whose hospitals have opened their doors to such extramural activities as polyclinics or other forms of ambulant treatment, systematic aftercare of patients with special provisions for convalescents and chronically ill patients, rehabilitation, and social welfare supervision. To be sure, most sizable Norwegian hospitals do undertake one or more of these activities, but they are apt to ignore the general practitioner instead of cooperating closely with him. The general practitioner and even the specialist is liable to be cut off from his own patient while he is in a hospital. Any physician who has worked as a general practitioner in Norway for some time knows what it is to send a patient to a hospital and to meet him again after his discharge when the following conversation takes place: "Yes, thank you, Doctor, all went well, and the operation was successful, but what was it they took out of me at the hospital?" to which question the physician can give no answer. In many parts of Norway the aftercare of convalescents and chronically ill patients is poor, the organization of the hospitals depending on the welfare of only acutely ill persons. It is this unfortunate state of affairs that is prompting the desire for hospital administration that, with a more regional character, would provide for more continuity of treatment.

Laymen or Physicians in Charge of Hospitals?—Dr. Evang discussed the question of whether a hospital should be under the administrative charge of a physician or of a layman with special training and aptitude for such work. With his rare opportunities for studying hospital administration in many different countries, Dr. Evang confessed to his inability to detect any definite tendency in either direction, though it must be admitted that in some large countries with a high hospital standard there seems to be a gradual inclination to replace physicians by laymen at the head of affairs. This is so with certain Anglo-Saxon countries, whose hospitals are of the "open" type as distinct from the "closed" type in vogue in Norway. The two types are therefore hardly comparable. It is curious that, though the Scandinavian countries are alike in many respects, Sweden and Denmark have largely reverted to laymen administration of hospitals, while Norway continues to confide the administration of almost all its hospitals to physicians. In this connection it is noteworthy that the cost of hospital administration is considerably lower in Norway than in Sweden or Denmark. The owners of the hospitals, the state and local authorities, are apt to clamor for closer scrutiny of hospital administration when they see how modern treatment increases expenses. They do not always realize that expensive modern treatment is also comparatively short treatment and therefore cheaper in the long run. In his advocacy of the physician administrator in preference to the layman, Dr. Evang pointed out that the latter is in an anomalous position, having to choose between the lay and the medical viewpoints. In any case, he is likely to feel that he is not on the same level with physicians. The administrator who is qualified as a physician is in a stronger position to protect his hospital from exaggerated claims by medical enthusiasts.

Mental Disease Problems.—Dr. Christofer Lohne Knudsen, who is the state's senior medical officer for psychiatry, has drawn attention to the main problems and solutions concerned with mental disease in Norway at the present time. In recognition of the psychiatric side of alcoholism, the state appointed, in 1949, a physician to serve as physician-in-charge for the care of alcoholic addicts. In that year there were some 22,000 persons referred to the official sobriety board as suffering from the effects of alcohol. There are already some 280 hospital beds reserved for them, and there are plans for adding to them in the near future a psychiatric hospital with about 50 beds.

A census by the public health service in July, 1949, showed that at this date there were 16,170 cases of actual insanity in Norway. For their accommodation the country's 22 asylums could offer only 6,392 beds. Yet the number of patients filling these asylums was 7,830—a state of overcrowding that helps to explain why prisons are being taken into use to house mental cases. For this reason Norway needs between 4,000 and 5,500 more asylum beds. The housing of mentally defective persons, of whom there are between 32,000 and 43,000 with an intelligence quotient of under 75, is also an acutely distressing problem. While a minimum of 5,200 beds are needed for low grade mentally defective persons, the actual accommodation available is only 1,115 beds. To help meet this difficulty, the law of July 28, 1949, provides for the financing of special homes for these patients at public expense. At the same time legislation was adopted to promote the institutional treatment of epilepsy. Early in 1951 the prison of Ilebu was rechristened Ila and was converted into a hospital for some 150 male psychopathic persons, whose actions brought them in conflict with the law. It is ironical that male criminal psychopaths are thus provided with special quarters but no special residential treatment is yet provided for female criminal psychopaths nor for psychopaths of either sex not in conflict with the law. Dr. Lohne Knudsen also drew attention to the great disparity between the numberless cases of neurasthenia and neurosis on the one hand and the little more than 300 hospital beds now available for them in certain psychiatric clinics. It is impossible to calculate the number of hospital beds needed for these patients, but every central hospital planned or under construction should be provided with a psychiatric department to deal with them.

Death of Prof. H. Rasmussen.—The sudden and unexpected death of Haakon Rasmussen early in April has deprived the young University of Bergen of its first professor of medicine. He was born in Bergen on Aug. 27, 1906, and was educated there and in Oslo. After a short period of general practice he pursued a scientific career, holding many hospital appointments as well as studying abroad. His patriotic activities during the war resulted in a year's imprisonment by the Germans. The title of his doctoral thesis in 1941 was "The Influence of the Thyroid Hormone on the Heart and Circulation: Experimental Investigation in Dogs." His professorship of medicine put him, in 1947, in charge of the medical side of the Haukeland Hospital in Bergen. Here he pursued his scientific studies with tireless energy and set the pace for all those working under him. Though his bent was largely that of the dispassionate scientist, he was delightfully human to those who knew him well. His latest book was on the dangers of obesity.

PARIS

Isolation of Coxsackie Virus.—Various authors have isolated and identified a virus of the Coxsackie type from the stools of patients with epidemic myalgia, or pleurodynia, also called Bornholm's disease, or from persons contaminated in the laboratory while manipulating the virus. The correlation between epidemic myalgia and the presence of the virus in the stools appears, at first sight, as being well established. But, when analyzing the numerous clinical syndromes, such as estival influenza, nonparalytic abortive poliomyelitis, pseudoherpetic angina of nurslings, aseptic meningitis, and virus encephalomyelitis (Guillain-Barré's syndrome), in which viruses of the Coxsackie type are present, the question arises as to whether the virus is really playing an essential etiological part in epidemic myalgia or whether the presence of a virus in a patient's stools is the result of a coincidence. Up to now, the presence of the causal agent in the muscles of persons suffering from epidemic myalgia has not been ascertained. M. Lépine and his associates of the Pasteur Institute had, during the summer of 1951, the opportunity of observing a large number of patients with epidemic pleurodynia and of taking biopsies from the muscles of patients at the site of maximum pain. Histological examination revealed an inflammatory infiltration and all degrees of alteration and hyaline degeneration of muscular fiber, lesions identical to those found in young mice experimentally inoculated with Coxsackie virus.

They inoculated the biopsy specimen of muscle into newborn mice. Typical lumbar paralysis developed in all of them on the third to fifth days, and in all generalized and histological lesions of Coxsackie were present; moreover, stools of the same patient taken on consecutive days were inoculated into a litter of newborn mice, causing a typical paralysis on the fourth and fifth days respectively. Another fact of interest was that a subsequent litter of the mouse that had fed the infected animals proved resistant to the virus taken from the muscles of the same patient, which revealed that the virus extracted from the stools and muscles was the same. In a case of typical myalgia with relapse, muscle specimen taken during the relapse revealed histologically an inflammatory infiltration and proved to be infectious in eight young mice, while stools taken at the same moment contained viruses. Lépine, in his communication of Feb. 5, 1952, to the National Academy of Medicine, stressed that these researches confirm, for the first time, the etiological value of the finding of a virus of the Coxsackie type in the stools of patients suffering from epidemic myalgia.

Death of Professor Brumpt.—A great scientist, Prof. Emile Brumpt, the parasitologist, died at the age of 74. He had a brilliant career and became a doctor of medicine in 1906, professor "agrégé" of parasitology and medical natural history in 1907, titular professor of parasitology at the Paris Faculty of Medicine, and member of the National Academy of Medicine in 1919. His scientific works are numerous. In 1901, while crossing tropical Africa, he studied African trypanosomiasis and suspected that Glossina palpalis was a vector of this disease; he explained the mechanism of transmission of American trypanosomiasis by hematophagous Reduviidae; he studied piroplasmosis of domestic animals and developed a vaccination for cows. He perfected xenodiagnosis, and he distinguished pathogenic amoebas from nonpathogenic amoebas. In Corsica he discovered

the life cycle of Schistosoma bovis and, subsequently established experimentally the complete cycle of human schistosomiasis. During his last voyage to Ceylon, he isolated Plasmodium gallinaceum in a hen, a strain much used for studying the chemotherapy of malaria. Brumpt did not hesitate to perform trials on himself. In Abyssinia, by having himself stung by an Ornithodorus, he proved that it was not the vector of relapsing fever in this region; he inoculated himself with certain monomorphic trypanosomes in order to prove their innocuity. Of international repute, he often lectured abroad, specially in South America; he was nominated honorary professor at the faculties of Montevideo, Mexico, Pueblo, and São Paulo, and professor honoris causa of the latter faculty and at Cairo. He was appointed a member of the academies of Turin, Rome, Rio de Janeiro, and Romania, of the Royal Academy of Belgium, and of the Indian Academy of Sciences. He was awarded important distinctions: the Patrick Manson Medal of the Royal Society of Tropical Medicine, the Gold Medal of the Tropical Medicine Institute of Hambourg, and, quite recently, the Theobald Smith Medal of the American Society of Tropical Medicine. He created the *Annales of Parasitology*, a journal of research in the field of parasitology.

SPAIN

Urologic Lectures.—A course of urologic lectures on "Value of the Various Surgical Techniques for Treatment of Prostatism" was given at the urology ward of the faculty of medicine of the Madrid University, March 20-22, 1952. Drs. Oreja Elósegui of San Sebastián, Edward N. Cook of the Mayo Clinic of Rochester, Minn., Gil Vernet of Barcelona, and A. de la Peña of Madrid were the lecturers. Dr. Gil Vernet discussed perineal techniques in treatment of obstruction of the neck of the bladder. He pointed out that these techniques, in general, involve long hazardous operations. Some Spanish urologists perform section of the urethra at the level of the apex of the prostate. The enucleation is made through the lower part of the structure, and the anastomosis is urethracervical. The speaker favored early rising of the patients after the operation and the use of a Foley's balloon and mass suture of the lateral regions of the neck of the bladder. He described Dr. Serrallach's technique, which includes prerectal incision, detachment of the anatomic planes, median longitudinal opening of the capsule and enucleation through the apex of the prostate, intraurethral use of Young's instrument, and hemostasis by means of Foley's balloon with stitches in a figure eight on both sides of the vesical neck. After the operation the reconstruction of the urethra can be verified through use of cystographic examination.

Dr. Oreja Elósegui dealt with "Techniques and Value of Suprapubic Surgery in the Treatment of Obstruction of the Neck of the Bladder." The speaker reviewed his own statistics, which covered a period from 1920 to 1928. In 1928 he reported on prostatectomies that he had performed both in two stages (323 cases) and in only one stage (954 cases). The rate of mortality of 4.2% was principally caused by the following: shock, pneumonia, embolism, and uremia. Less frequent complications were pyelonephritis, phlebitis, cardiopulmonary diseases, and epididymitis. With the discovery of antibiotics in 1946 and the use of good antihemorrhagic techniques the rate of mortality dropped to 2.2%, certain old surgical postulates disappeared, and the use of fixation of the bladder to the abdominal wall was discontinued. In 90% of the cases the period of hospitalization was lowered to less than nine days. The speaker prefers local procaine hydrochloride (novocain®) anesthesia for cystotomy and general anesthesia for prostatectomy.

Dr. Edward N. Cook discussed the pathogenesis and symptoms of prostatism and reported on his experience with transurethral resection in more than 6,000 cases. The speaker emphasized that patients with signs of irritation owing to prostatism are not candidates for surgery.

Dr. A. de la Peña compared retropubic and transurethral techniques in the various forms of prostatism. He favored Millin's technique, which he believes represents great progress in surgery of the prostate, despite the fact that this technique is followed by sclerosis of the neck in at least 18% of the cases.

TURKEY

Effect of Streptomycin and Sulfonamides on Glanders.—In the Turkish *Bulletin of Hygiene and Experimental Biology* Turgut Tulga, D. V. M., of the Military Veterinary Biological Institute, Ankara, has published the results of his experiments on the effect of antibiotics on glanders and on the action of streptomycin and sodium sulfamethazine ("sulmet") in guinea pigs infected with glanders.

Human glanders is rare in Turkey. According to the Ministry of Health and Social Assistance, only 18 cases were reported during the years 1938 to 1948; all were fatal. During the last three years four patients from the environs of Ankara who had acute glanders were admitted to the Ankara General Hospital. The clinical diagnosis was confirmed by bacteriological and serologic examinations. In 1949, a young farmer, whose horse died two weeks prior to his admission, had septicemia. After taking 50 gm. of streptomycin and 60 gm. of sulfadiazine, the patient recovered. During the following 18 months no relapse occurred. In 1950, the second patient, a young blacksmith with acute glanders, was given streptomycin and sulfadiazine and recovered. After seven months the patient had a relapse. He was cachectic and had a large phlegmon on the cheek; x-ray examination revealed lesions on the lungs, and the patient was in great pain. From material obtained by puncture from the abscess on the left tibia, Malleomyces bacilli were isolated. Serologic examination confirmed the diagnosis. Streptomycin and sulfadiazine improved the patient's condition temporarily. The external lesions soon disappeared, but the metastasis to the inner organs caused the death of the patient two months later. The third patient was a farm boy. Because of paronychia on the thumb, he was admitted to the surgical department. Soon after intervention the patient's joints became painful, swelled, and reddened, and his temperature rose. Then it was learned that he had helped with the skinning of a dead horse. The patient was isolated and given streptomycin and sulfadiazine therapy. He recovered after two months. Malleomyces bacilli were isolated from the pustule on the cheek. The fourth patient was admitted in October, 1951. From the patient's blood serum and abscess Malleomyces bacilli were recovered. This patient was given sulfadiazine every four hours and recovered.

Concerning his observations on the action of streptomycin and sodium sulfamethazine on glanders-infected male guinea pigs, microbiologist Dr. Turgut Tulga reported that the animals, weighing from 350 to 380 gm., were given intraperitoneal injections with different strains of Malleomyces isolated from patients. In all animals orchitis developed but not fistulas. Eighteen infected control animals died after 12 to 15 days. Animals receiving streptomycin therapy were given 28 mg. per kilogram of body weight per day, subcutaneously or intramuscularly; an average dose of 10 mg. was given, either at 6 hour intervals or 5 mg. twice daily. Treatment was begun 12, 24, and 48 hours after the infection and was continued 12 to 14 days. All animals died from 12 to 23 days after the infection. Sodium sulfamethazine was given subcutaneously, 330 to 660 mg. per kilogram of body weight per day.

The initial dose for each of eight guinea pigs was 250 mg. of sodium sulfamethazine 16 hours after the infection and thereafter 125 mg. every 12 hours for 14 days. The initial dose for each of 11 guinea pigs was 125 mg. 24 hours after the infection. Thereafter the daily dose of 125 mg. was given in four doses with an interval of six hours. When on the seventh day symptoms of glanders appeared, the dose was increased to 250 mg. given in four doses with an interval of six hours. Two animals in this group died 11 to 12 days after the infection. Ten of 11 control animals died from 9 to 16 days later; one lived for 21 days.

In another test, seven animals were given sulfamethazine therapy, begun 16 days after the infection, in the same dose as used in the group receiving sulfamethazine 16 hours after the infection. Similar results were obtained. The surviving 24 animals were held eight months for observation. They were obviously in good health and had gained 250 to 360 gm. No pathological changes were found at necroscopy, and cultures were negative, indicating the effectiveness of sodium sulfamethazine in the treatment of acute experimental glanders in guinea pigs. Streptomycin had no effect.

CORRESPONDENCE

SHOE DERMATITIS

To the Editor:—I am very much interested in shoe dermatitis. To gain the proper perspective of this subject, I believe it is important to recognize that sweating is a continuous secretion. During episodes of thermal sweating, there is a tendency for there to be less psychic sweating from the palms, soles, and axillae; however, with the lowering of the thermal threshold, there occurs a compensatory outflow of so-called psychic or emotional sweat. A careful review of this subject in the past has disclosed that American physiologists have paid little, if any, attention to the subject of psychogenic sweat. In fact, two current monographs on this subject have been thoroughly reviewed, and no reference was found. I believe that we have overlooked a vital physiologic principle. Certainly, the ridicule would be great if we were to interfere with the secretion of tears, saliva, or bile, to say nothing of the kidneys. The importance of these physiologic principles are recognized, but just as important is the function of psychic sweating. It is most interesting to consider how we have violated this physiological principle. Present day efforts are directed at trying to stop it. Thus we see a fair incidence of axillary dermatitis, and, of course, dwarfing this incidence is that of pedal dermatitis.

I believe it is true that whenever a physiological function is interfered with, we can expect a train of sequelae. The commonest complaint we encounter is a patient stating, "My feet sweat terribly." This is wrong because it is not their feet, but it is impervious material preventing evaporation. Along the same line, parents complain of children continually kicking off their shoes. Children prefer that their feet be comfortable. They complain that their feet are hot. Consider the incidence of wet, soggy toes, so-called dermatophytosis, bromidrosis, and symmetrical lividities, to say nothing of the disturbance in epithelial functions of the skin of the foot.

I noticed in a recent issue of THE JOURNAL (**148:**940 [March 15] 1952) a discussion on frostbite. About six months ago, I corresponded with Dr. E. R. Hering. He was at the area of operations at the time so many Marines were incapacitated by frostbite. I am sure you will be interested in the following portion of his letter:

"Since my return from Korea, I have been rather deluged with requests for options on various methods of control of frostbite, such taking the form of a chemically heated insole, a completely insulated boot, etc., all of which ignore the primary factor, which, in my opinion, is the production and nonabsorption of the perspiration produced by exertion. It is interesting to note that on our way up to and during the advance phase in the Reservoir, although we were operating under similar weather conditions, no frostbite of any magnitude occurred. This was due, I believe, to the fact that warming tents, on the basis of two per platoon, were manned by hospital corpsmen in close proximity to the front and every Marine had to report at least once a day for foot inspection and change into dry socks. The psychic factor may play a part, but actually I think those men were beyond psychic stimulation." Apparently, a short time later, Bell, Stahlgren, and Sherer (*U. S. Armed Forces M. J.* **3:**35 [Jan.] 1952) saw many of the casualties that had been removed from the Korean theater. Footgear consisted of waterproof boots. These authors concluded that one of the important factors in the high incidence of frostbite during the 12 day retreat was "Feet constantly wet because of excessive perspiration within waterproof boots and inadequate foot care." There has been a trend in the past quarter century to the use of impervious materials in footgear. These materials prevent the evaporation of thermal, insensible, and psychogenic sweat. As a result, there occurs a train of symptoms and signs on the feet that, today, we lightly pass off as a touch of fungus infection. In the past year, I have confirmed again and again the invaluable contribution of Nickerson on the importance of wearing absorbent sandals and/or shoes. How simple this is—to allow the thermal and psychogenic sweat to evaporate and thus the pedal symptoms and signs to subside.

I believe the A. M. A. could perform an outstanding job of public relations by an adequate discussion of this entire subject.

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DURATION OF PREGNANCY

To the Editor:—The work that was described by Dr. H. L. Stewart Jr. in his article "Duration of Pregnancy and Postmaturity" (*J. A. M. A.* **148:**1079 [March 29] 1952) has, without doubt, cast much light on the true duration of pregnancy. In a group of 135 women, he was able to determine the elapsed time between ovulation or conception (as detected by the basal body temperature method) and the onset of spontaneous labor. He found that this interval ranged between 250 and 285 days, with an average of "266 to 270 days." Furthermore, he was able to demonstrate that, in his series, what seemed to be prolongation of pregnancy was only apparent, being due to the fact that duration was counted from the first day of the last menstrual period. This led to errors in the estimate of pregnancy duration when ovulation was unusually delayed after the last period.

He goes further, however, and states "The maximum limit of human pregnancy from ovulation to spontaneous onset of labor and delivery of a full-term, living baby would be 285 days, according to these data." He suggests the application of these data to medical jurisprudence in determination of paternity. He says, "Decisions establishing paternity within a period of 300 days from the last coitus are reasonable, but longer periods seem most questionable and are conspicuous by the complete absence of any supporting data from this study."

The obvious vast importance of this latter concept to medical jurisprudence justifies closer examination of this question, for fear that the application of such criteria might lead to unwarranted injustice.

The total of Dr. Stewart's data is not presented in his article (undoubtedly for reasons of space), but fortunately chart 1 (page 1080) provides data on 34 of his cases (those in which ovulation was 16 days or more from the previous menstrual period). Conclusions drawn from this sample would apply only to women who have a similar relationship between ovulation and prior menstruation. Although it would be interesting to study all of Dr. Stewart's cases, investigation of the sample available will yield valid, if less generally applicable, conclusions and will demonstrate the technique of statistical reasoning that can be used with profit in handling biological data.

1. A graphical plot of the cases in chart 1 revealed that their frequency followed the normal distribution curve; moreover, a check of these data with the normal curve by means of the chi-square test demonstrated reliable goodness-of-fit, which means that the normal distribution curve can be used with confidence in dealing with these data. This means that cases close to the average in duration appear most commonly, and those cases that are very far from the average are found only very rarely. This is logical, for highly intelligent persons are much less common than persons of average intelligence; very tall persons are much less common than those of average height, etc.

2. That persons in whom the duration of pregnancy (for example, 305 days) differs from the average (268 days) by a large number of days will be encountered only very rarely leads to the following conclusion. A failure to find cases of true pregnancy duration of 305 days in a series of 135 women does not mean that no such cases would be found in a series of 10,000,000 births. Indeed we might have suspected that Dr. Stewart would not have come across the unusual extremely prolonged pregnancy in only 135 deliveries. Prediction of the rate of occurrence of unusual cases can be done only by the study of vast series of cases or by application of statistical techniques as illustrated below.

3. Further statistical examination of the data in chart 1 in Dr. Stewart's paper revealed that the average or mean of the group was 267.94 days (rounded for the purpose of discussion to 268 days) and a "standard deviation" of 8.36 days. The exact meaning of the last entity can be obtained best from any good textbook of statistics. These two statistical values can be used to calculate the probable frequency of occurrence of rare cases. This has been done in part in my table. In column A is given a series of arbitrary maximum limits of duration of pregnancy, and in column B is given the corresponding probable incidence of cases in which the duration of pregnancy would be greater than this supposed limit and in which the mother might have been subjected to entirely untrue suspicion. It will be noted that application of the limit of 300 days as recommended by Dr. Stewart would lead to a judgment of error in one case in every 31,000 births. To say that a pregnancy lasting 310 days from ovulation to onset of labor is extremely rare is quite different from saying that it cannot occur. It is just these unusual cases that are likely to come to court.

Column A Arbitrary Maximum Limit of Duration of Pregnancy in Days	Column B Approximate Probable Incidence of Pregnancies Exceeding Supposed Upper Duration Limit of Pregnancy
284	1 case in 42 births
293	1 case in 740 births
301	1 case in 31,000 births
310	1 case in 3,400,000 births

4. Any such calculations can apply only to women who come from a group whose characteristics are very similar to the sample studied. It is entirely possible that women of other races or environments might have considerably different durations of pregnancy.

5. The establishment of an upper limit for the duration of pregnancy is as difficult as discovering the maximum intelligence of a human or the maximum height of a man. It certainly cannot be approached with other than very large samples.

6. From these considerations, it is probable that the duration of pregnancy is a poor test of paternity. Pending vastly greater experience, it would seem that genetic tests (for example, blood types) are much more reasonable in ruling out paternity. Cases in which there are remote errors (for example, mutation) would be much less likely to come to court and hence would be involved only in proportion to their incidence; for example, a blood type mutation that occurs once in a million births would lead to error only once in a million paternity suits. An excessively long duration of pregnancy that occurs once in a million births is much more likely to come to court, since prolonged pregnancy is one of the grounds for suspicion. It could conceivably occur once in every 50 paternity suits, and an error of one case in 50 would be most unfair to the parties concerned.

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ROENTGENOLOGIC CONTROL OF NERVE BLOCKS

To the Editor:—In regard to the use of iodopyracet (diodrast®) in the control of nerve blocks (Alexander, F. A. D., and Lovell, B. K.: *J. A. M. A.* **148**:885 [March 15] 1952), I feel that a note of caution should be sounded. Urologists and radiologists not infrequently see x-ray evidence of inadvertent extravasation of this medium into the perirenal and periureteral spaces. This occurs when retrograde pyelography is done in the early postoperative period following renal, pelvic, or ureteral surgery. The medium may escape through incompletely healed renal, pelvic, or ureteral incisions. This also occurs when the medium is injected through a ureteral catheter that has inadvertently perforated the ureter or renal pelvis or parenchyma. Since the extravasation of the contrast medium is per se quite painless in deeper tissues, little attention has been paid to this occurrence.

Recently I operated on a patient whose renal pelvis was encased in dense scar tissue. Three months previously retrograde pyelography had been performed on her elsewhere and about 15 cc. of iodopyracet had extravasated into the peripelvic space. This experience led me to investigate the effect of iodopyracet on the perirenal and periureteral tissues of rabbits. From 5 to 15 cc. of the substance in the same concentration used by the authors was injected in these areas in rabbits, who were then killed at intervals from several days to several weeks. Gross and histological studies of the tissues revealed an early florid sterile inflammatory reaction leading eventually to sclerosing lipogranuloma and dense fibrosis. From these findings I concluded that extravasation of iodopyracet in the perirenal and periureteral spaces is not innocuous but on the contrary may cause considerable damage by producing obstructing strictures (Landes, R. R., and Hooker, J. W.: *J. Urol.*, to be published). Whether perineural fibrosis takes place and whether this may cause permanent damage should be considered in using the described technique.

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OBSTETRICS IN ARABIA

To the Editor:—You may be interested in some information on obstetrics in Arabia, which is so different from that in America that it is almost unbelievable. I spent two years in Arabia just after the new hospital had opened and when women were fearful of entering unless they were at death's door. The picture is rapidly changing, and more and more normal patients are coming in as they learn our western ways.

Of 150 deliveries from July, 1950, to July, 1951, at the Arab hospital in Dhahran, Saudi Arabia, 110 were normal and 40 were complicated. There were no maternal deaths, and there were 15 prenatal deaths. There were 3 ruptured uteri, 1 marginal placenta previa, 1 central placenta previa, 1 ruptured bladder, 1 head appearing at the anus through the rectum rather than through the vagina, one hand presentation, one patient admitted with all delivered but the head for two days, 4 breech presentations, 4 midforceps and 5 low forceps deliveries, and 11 vaginotomies.

Most of these complications were due to the crude custom, centuries old, prevalent in the Middle East, of packing the vagina with salt following the birth of the baby, theoretically shrinking the vagina so that the women will again be pleasing to their husbands. Actually this causes adhesions, increasing with each pregnancy, so that after the third or fourth pregnancy the vagina may be completely sealed off as if a door had been plastered over. By speculum examination there is no opening, and a new opening must be made by scissors between bladder and rectum, avoiding the uterine arteries. Bleeding is minimal and tamponaded by the head so that no sutures are required.

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MEDICAL MOTION PICTURES

Mental Symptoms: A series of nine films produced in 1951 by the National Film Board of Canada for the Mental Health Division of the Department of National Health and Welfare. Procurable on purchase from McGraw Hill Book Co., Text Film Department, 330 W. 42nd St., New York.

No. 1.—Schizophrenia Simple Type Deteriorated, sound, showing time 11 minutes, $35.
No. 2.—Schizophrenia Catatonic Type, sound, showing time 11 minutes, $35.
No. 3.—Schizophrenia Hebephrenic Type, sound, showing time 12 minutes, $45.
No. 4.—Paranoid Conditions, sound, showing time 12 minutes, $45.
No. 5.—Organic Reaction Type Senile, sound, showing time 10 minutes, $35.
No. 6.—Depressive States #1, sound, showing time 12 minutes, $35.
No. 7.—Depressive States #2, sound, showing time 11 minutes, $35.
No. 8.—Manic State, sound, showing time 14 minutes, $55.
No. 9.—Folie à Deux, sound, showing time 14 minutes, $55.

Each of these films shows a patient, with a particular psychiatric syndrome, in a casual, loosely structural interview, or conversation, with a psychiatrist. The specific disorders illustrated are indicated by the list of titles mentioned above.

Comments on Entire Series.—These are excellent films for teaching purposes. They are obviously designed to serve the same function as would a clinical demonstration of a patient—and no more. The films are admirably suited for use as adjuncts to a lecture or discussion by a competent person. The availability of such films provides dual advantages. 1. This clinical material is brought into the classroom without subjecting patients to repeated "exhibitions." 2. Patients are now available, through film, to many institutions and agencies that ordinarily would not have any patients or a sufficient variety of patients to utilize clinical demonstrations of psychiatric disorders.

Sound motion pictures make possible a kind of vivid experiencing of examples of mental disorders, which can never be achieved from verbal descriptions. The viewer's simultaneous reactions to the general appearance, carriage, dress, gestures, movements, facial expressions, emotional responses, and verbalizations of the patient make a vivid and lasting impression that is much more meaningful, integrated, and permanent than the labored synthesis of a paragraph of descriptive material. Furthermore, this type of presentation in the classroom permits in attenuated form an emotional response to the impact of the psychiatric patient quite comparable to that experienced in a face to face contact. This is accomplished, however, in a classroom setting where the viewer has no immediate responsibility to the patient—thus no need to conceal or deny the fear, sympathy, revulsion, shame, or any other reaction to the clinical material. This opportunity to experience these reactions "in small doses," recognize, and gradually begin to deal with them is of inestimable value in the preparation of personnel to work with psychiatric patients.

Finally, there is the multitude of material offered for the discussion of psychopathology. A wide variety of disturbances of perceptual, intellectual, affective, and motor processes are to be found in the various patients filmed. Specific aspects of pathological functioning can be singled out for discussion and can be seen in relation to the other facets of the patients' behavior at the time. One technical deficiency in the films offers some limitation here; at times, it is difficult to hear the patient's comments, and thus some of the indications and illustrations of the pathology present are not so readily apparent as would be desirable.

Comments on Specific Films.—"Schizophrenia Simple Type Deteriorated." There may be considerable question as to this patient's being considered a "simple" schizophrenic. It is not the best choice of patient. It would seem to be unquestionably inaccurate to label this condition "deteriorated." Too much ego preservation is apparent. Again, in the film itself, the condition is described as "chronic." This appears to be much more accurate, since the patient's behavior shows many direct indications of the chronicity of the illness.

"Schizophrenia Hebephrenic Type." The sound is poor.

"Depressive States #2." The second patient shown is described as suffering from a "reactive depression." The choice of patient to illustrate this syndrome appears to be an unfortunate one. Depressive features are evident; bandaged wrists indicate the recent suicidal attempt. This does not, however, appear to be a reactive depression at all. The specific external precipitating stress to which the patient should be reacting with depression is almost categorically denied. The diagnosis is highly questionable.

"Manic State." This film appears to be somewhat mislabeled. In the narration the patient is described as a "hypomanic," which seems to be a more accurate description of the condition portrayed. It is particularly difficult to hear this patient's verbilizations.

These films should be useful with a wide variety of student groups. Any course of instruction in psychiatric syndromes and psychopathology in a mental hospital could profitably utilize this material, e. g., with psychiatric residents, nurses, psychiatric aides, and clinical psychologists. Courses in psychiatry for medical students and courses in abnormal psychology for advanced university students could effectively utilize these films. They would also be valuable for use with students in advanced psychiatric nursing programs as well as in conjunction with the basic nursing students' psychiatric affiliation. These fill a long-standing need and contribute much to psychiatric education.

Out of True: 16 mm., black and white, sound, showing time 41 minutes. Produced in 1951 by Crown Film Unit. Procurable on rental ($5) or purchase ($150) from International Film Bureau, 57 E. Jackson Blvd., Chicago.

This film deals with a young mother of two children, her psychotic breakdown, flight into an unsuccessful attempt at suicide, her hospitalization in a mental institution, and the type of treatment she received that led to her recovery. Her hostility to her mother-in-law, stemming from her earlier hostility to her own mother, are brought out as the basis for the breakdown. Depicted also are the interviews with the husband and mother-in-law by the hospital physician and by the social service case worker. Through these interviews both husband and mother-in-law are helped to resolve their ignorance and prejudice regarding the significance of mental illness and to accept the need for treatment of the patient. Modern hospital treatment methods, such as intravenous amobarbital (amytal®) injections, electroshock treatment, group therapy, and physical rehabilitation, are shown. Kind sympathetic attitudes on the part of the nurses towards the patient and the informal spontaneous friendships formed between patients further emphasize the therapeutic atmosphere of the hospital.

It is a good presentation of the various treatment techniques and of the functions of a well-staffed modern psychiatric hospital. There may be a danger that the treatment program shown is oversimplified, since the ease with which everything comes about could mislead lay audiences about the complexity of psychiatric treatment and the time necessary for effective treatment. Immediate orientation is difficult because of the abruptness of the beginning of the film. The photography and acting are well done and are handled with imaginative creativeness. The sound is fair. The film can be used effectively with both professional and lay audiences if followed by a discussion led by someone engaged in mental health work.

The Billion Dollar Malady (The Common Cold): 16 mm., black and white, sound, showing time 14 minutes. Produced in 1952 by and procurable on rental ($3.50) or purchase ($75.00) from Bray Studios, Inc., 729 Seventh Ave., New York 19.

This film begins by emphasizing the statistical facts about colds, pointing up the effects in loss of time and efficiency in industry and the cost of drugs and medical care. It then portrays what we know about colds, their causes, how to avoid them, and the importance of maintaining good health as a vital safeguard. Essentially the film is scientifically accurate. Points that might be criticized are the impression given that all colds are due to viruses and the lack of stress of the factor of secondary bacterial invaders. The demonstration of ciliary action is poorly contrived. The photography and narration are satisfactory. The film can be recommended for lay audiences, hygiene classes in grades seven and up, industrial workers, and nurses.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Optometry Practice Acts: Qualifications of Applicants for Examination.—Forty-one petitioners joined in a proceeding against the Board of Regents of the University of New York to restrain the regents from prohibiting the petitioners from taking the next optometry board examination. The case was heard in the supreme court, special term, Albany County, New York.

The petitioners are four groups of persons, each group having graduated from a different optometry school. They have been refused the right to take an examination by the Board of Regents, the passing of which would entitle them to become licensed optometrists in the state. Some of the petitioners sought to file for the examination held on June 16, 1950, but were advised by the Department of Education that their applications would have to be filed a month before the meeting of the Board of Regents, at which action would be taken on such petitions and that another licensing examination was scheduled for Oct. 3 to 6, prior to which time their application would be acted on. Some time after June, 1950, they were informed that the State Education Department had under review fundamental policies in the field of optometry and that on completion of the study the several petitions would be submitted to the regents for consideration and that the examination had been deferred until late November or December. On or about Nov. 22, 1950, petitioners were advised by the department that the Board of Regents, at a meeting held on Nov. 17, 1950, had adopted the following policy with respect to graduates of schools of optometry that are not registered by t' department: "*Moved:* That applicants be admitted to the licens ng examination in optometry upon presenting evidence of completion of the final year of study in a registered school of optometry or of completion of a postgraduate course of study of at least one year in such an institution," and further advising the petitioners as follows: "Therefore, you will not be eligible for consideration for admission to our licensing examination until such time as you have complied with the above policy."

The petitioners conceded that the colleges from which they graduated were not certified by the State Department of Education but asserted that these schools had been duly approved and recognized by the American Optometric Association, the United States Veterans Administration, and 46 states of the union, and, furthermore, for a period of more than 10 years prior to this action, the Board of Regents had permitted graduates of these schools to take the examination. In fact, certain of the students who graduated with the petitioners and who filed in time for the June examination had been permitted to take that examination. The petitioners also stated that on entrance to their schools certain of the petitioners had communicated with Dr. Conroe, Assistant Commissioner of Education, who had the profession of optometry in his charge, stating that they were students of said college and inquiring as to the procedure required to take the examination, that they had received replies from Dr. Conroe, and that no statement was contained in these replies that the schools that they were attending were not recognized. In reliance on the policy pursued by the department for over 10 years, they enrolled in these schools, many of them with the aid of benefits under the Veterans Benefit Act, and their finances were now exhausted. They said they cannot comply with the requirement of an additional year of study in a registered school of optometry because the schools will not accept students for the one year course.

The State Education Law, at the time these petitioners filed their applications, provided that "after January first, nineteenhundred thirty, [the applicant must show that he] has graduated from a school of optometry conducted as a department of a university registered by the regents with either the degree of bachelor of arts or that of bachelor of science and a certificate of graduation in optometry." For more than 10 years, however, students who were graduated from the same schools as the petitioners were permitted to take the examination, although the above provisions of the Education Law requiring graduation from a school of optometry registered by the regents were in effect.

The petitioners, therefore, alleged that the action of the Board of Regents in denying them the right to take the examination was arbitrary, capricious, discriminatory, and unfair, and they asked that the action of the Board of Regents be annulled.

There can be no question, said the court, that the Board of Regents is clothed with the power and authority to determine the qualifications that are required for admission to the examination, and this discretion reposed in the Board of Regents is not to be disturbed unless, in the exercise of the discretion, the action of the Board of Regents is arbitrary, capricious, discriminatory, or unfair. The sole question for determination here, continued the court, is whether the action of the Board of Regents, in refusing to permit these petitioners to take the optometry examination, was arbitrary, capricious, discriminatory, or unfair.

These petitioners entered the schools in good faith and with the knowledge that graduates of the schools were being admitted to the examination. They corresponded with the Assistant Commissioner of the Department of Education, and in that correspondence there was no hint or suggestion that the schools that they were attending were not satisfactory. On graduation, they filed petitions to take the examination. The petitioners met the qualifications required at that time by the Board of Regents. They were, however, compelled to wait a long time before they were advised of the change of policy adopted by the regents; in fact, it was long after the beginning of the following school year. Even if we assume that the department is correct in stating that these students will be permitted to attend Columbia University and to take a year's course, it means that by reason of this change of policy these students will be delayed from taking the examination for a period of two years, a year lost in waiting for the determination and the additional year required in school. The action of the Board of Regents was retroactive. The Board of Regents changed the requirements several months after the petitions had been filed and after the scheduled date of the examination. The determination of the regents is discriminatory in that certain students from the same schools with the same qualifications were admitted to the examination. It must be borne in mind that if the relief requested by the petitioners is granted it does not admit the petitioners to the profession. They must satisfactorily pass the examination. The public, therefore, will be protected in that no one will be permitted to practice this profession without successfully passing the examination, which the court must certainly assume will be a fair test of the applicant's qualifications. If an applicant has complied with all the conditions necessary to the issuance of a license at the time of his application, it has been held that the licensing authority may not arbitrarily impose other and different conditions not theretofore existing. The action of the Board of Regents was to impose on these petitioners other and different conditions than pertained at the time of their application for permission to take the examination. The action of the Board of Regents in changing its policy was within the discretion of the Board of Regents and should not be disturbed so far as future applicants are concerned, but the action of the Board of Regents in refusing the petitioners permission to take the examination when they had qualified therefor under the standards existing at the time they filed for the examination, was arbitrary, capricious, discriminatory, and unfair. The court, therefore, ruled that the petitioners were entitled to take the examination in optometry. *Marks et al. v. Regents of University of New York et al., 106 N. Y. S. (2d) 306 (New York 1951).*

MEDICAL LITERATURE ABSTRACTS

UNITED STATES

A.M.A. Arch. Surgery, Chicago

64:269-408 (March) 1952. **Partial Index**

The Elderly Surgical Patient: Analysis of 500 Consecutive Cases of Patients 60 Years of Age or Older. D. T. Bosch, A. Islami, C. T. C. Tan and C. A. Beling.—p. 269.
*New Regimen in Feeding the Critically Ill: Preliminary Report. J. Elliott, D. W. Smith, J. J. Griffitts and others.—p. 278.
Palliative Therapy with Fractioned Intra-Arterial Nitrogen Mustard: Report of Its Use in Case of Persistent Cancer of Tongue with Unusual Complication. H. Schwarz II, S. Castanares and G. McAleese.—p. 286.
Acromioclavicular Dislocation Treated by Transference of Coracoacromial Ligament. J. S. Neviaser.—p. 292.
Femoral Hernia: Operative Cases at Johns Hopkins Hospital During 21-Year Period. A. R. Koontz.—p. 298.
Surgical Treatment of Arteriosclerotic Aneurysms of Abdominal Aorta. G. de Takats and M. R. Marschall.—p. 307.
Acute Diverticulitis of Cecum: Report of Four Cases and Review of 153 Surgical Cases. J. Lauridsen and F. P. Ross.—p. 320.
Surgical Management of Congenital Malformations of Anus and Rectum: Report of 111 Cases. H. E. Bacon and L. F. Sherman.—p. 331.
*X-Ray Visualization of Intervertebral Disk, with Consideration of Morbidity of Disk Puncture. W. J. Gardner, R. E. Wise, C. R. Hughes and others.—p. 355.
Reduction in Elevated Cerebrospinal Fluid Pressure by Artificial Kidney: Experiments on Acute Overhydration in Renal Insufficiency. H. R. Bernard, H. W. Fischer and J. W. Bassett.—p. 365.
Intestinal Surgery in Infants and Children Simplified by Use of Multitoothed Clamps. R. DeBord and W. J. Potts.—p. 373.
Results of Primary Inguinal Hernioplasty. L. T. Palumbo, R. E. Paul and F. B. Emery.—p. 384.

Feeding the Critically Ill.—A preliminary report is made on a four year study of the nutritional management of more than 500 critically ill patients. A new regimen has been developed, based on the newer knowledge of utilization of amino acids for protein metabolism. On this regimen amino acids and other nutrients in balanced solution are administered continuously at a constant rate through a small tube inserted into the gastrointestinal tract. The typical feeding formulas contain protein, carbohydrate, calcium, potassium, phosphorus, magnesium, sodium chloride, sodium lactate, and ethyl alcohol in measured amounts. The nutrient solutions are prepared in a sterile and stable form. They can be stored at ordinary temperatures for long periods without deterioration. In a group of 254 patients between the ages of seven months and 94 years who were fed by this regimen, the average duration of feeding was 15 days. The adult patients received an average of 2,500 cc. of formula daily containing from 125 to 200 gm. of protein and providing approximately 2,000 calories. One patient fed continuously for 214 days had a true weight gain of 32 lb. (14.5 kg.). Continuous drip feeding of partially hydrolized solutions appeared to meet the demands of continuous protein metabolism. This method of nutritional management has unusually broad applications, especially when prolonged feeding is required for institutional and home care of the critically ill.

Roentgen Ray Visualization of Intervertebral Disk.—A modified Lindblom's method of direct injection of radiopaque material into the intervertebral disk was used in 89 patients. Satisfactory diskograms were obtained following 186 injections of iodopyracet injection (diodrast®), while in 17 instances satisfactory roentgenograms were not obtained because of failure to introduce the needle into the disk, inability to inject the dye, or rapid disappearance of the injected dye. Thirteen of these failures were at the fifth lumbar interspace. Fifty-four disks that had been observed on satisfactory diskograms were explored in 48 patients. In 46 of these a diagnosis of posterior protrusion of mild to severe degree had been made from the roentgenograms. In 39 of the 46, a protrusion of sufficient degree to explain the patient's symptoms was found at surgical intervention. In two-thirds of these proved cases the patient's sciatic pain was reproduced by the injection, while in one-third the dye was seen to have escaped in the epidural space. Reproduction of sciatic pain during the injection should not be relied on unless protrusion of the disk is also apparent on roentgenograms. The presence of the dye in the epidural space is not pathognomonic of a tear of the posterior spinal ligament and is significant only when accompanied by roentgenographic evidence of protrusion. By the injection of iodopyracet it was possible in many cases to differentiate a normal disk, a degenerated disk, and a degenerated disk with posterior protrusion. The normal disk is usually characterized by a pooling of the contrast medium in the spaces above and below the intact nucleus, producing a bilocular shadow that is seldom seen with a protruded disk. In one of the 89 patients septic necrosis of the disk developed after injection of the contrast medium. Direct injection of the intervertebral disk does not require hospitalization, although in a few instances the sciatic pain reproduced by the injection was so severe that intravenous administration of thiopental (pentothal®) sodium was required to complete the injection. Increasing experience with this test should lead to greater accuracy in interpretation and a better understanding of the disk syndrome. This test provides direct visualization of the pathological process in contrast to the indirect evidence afforded by myelography. It is too early as yet to determine the relative accuracy and morbidity of these two procedures.

Alabama State Medical Assn. Journal, Montgomery

21:249-280 (March) 1952

Case of Pulmonary Hypertensive Pain or Hypercyanotic Angina. E. Balthrop.—p. 249.
Ruptured Uterus. E. G. Waldrop.—p. 251.
*Osteitis Pubis. W. M. Woodall Jr.—p. 258.

Osteitis Pubis.—Woodall calls attention to the more frequent recognition of osteitis pubis in recent years. It is most commonly seen following prostatectomy, but has also been reported in association with such conditions as difficult labor, trauma to the lower abdomen, herniorrhaphy, pyelonephritis, prostatic abscess, and genitourinary instrumentation. From 8 to 60 days after the operation or trauma, the patient suddenly complains of severe pain in the pubic area, with possible radiation to the inner thighs or groin or slightly upward on the abdomen. Point tenderness over the symphysis is exquisite, and a slight generalized enlargement or widening may be palpable. There is marked spasm of the adductor thigh muscles attached to the pubis, and any attempt to abduct or rotate the legs causes extreme accentuation of the pain. If the patient agrees to stand or walk at all, it is with great reluctance and the movements are quite guarded, slow, and painful. Coughing, sometimes micturition and defecation, or any movement or pressure in the pelvis, direct or indirect (as in standing or sitting), increases the pain in the pubic arch. The roentgenologic picture is that of acute bone atrophy, but usually this is evident only after the third week. It consists of an early fuzziness and fraying of the periosteum, then rarefaction with decalcification and separation of the symphysis (the process being at its maximum during the fourth to sixth week). Subsequently there may be simultaneous healing of rarefied bone with sclerosis while osteolysis is progressing elsewhere. The disease is self-limited, lasting from two to eight months. In view of this prognosis, treatment is directed chiefly toward relieving the pain and spasm. Two cases are presented. In the second cortisone and streptomycin in combination seemed to lessen the pain and shorten the course.

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Titles marked with an asterisk (*) are abstracted.

American J. Digestive Diseases, Fort Wayne, Ind.

19:61-96 (March) 1952

Modern Concepts of Physiopathology of Diabetes Mellitus. J. H. Barach. —p. 61.
Spontaneous Cholecystoduodenostomy: Report of Case of Long Standing. I. R. Jankelson and J. J. O'Conner.—p. 66.
Past and Present Concepts of Energy Metabolism and Obesity. M. A. Goldzieher and J. W. Goldzieher.—p. 69.
Serum Amylase in Peptic Ulcer. J. C. Hagan, A. M. Schoen and R. L. McGeachin.—p. 72.
Rupture of Esophagus Induced by Vomiting. A. R. Small and L. J. Boyd. —p. 73.
Solution for Parenteral Administration of Calcium. R. H. Hoffmann, E. M. Abrahamson and B. A. Josephson.—p. 79.
Pharmaco-Radiography of Stomach and Duodenum. G. Albot.—p. 82.

American Journal of Medicine, New York

12:261-378 (March) 1952

*Treatment of H. Influenzae Meningitis with Aureomycin and Chloramphenicol: Experience in 30 Consecutive Cases. E. B. Schoenbach, H. C. Spencer and J. Monnier.—p. 263.
*Diagnosis and Immediate Prognosis of Japanese B Encephalitis: Observations Based on More Than 200 Patients with Detailed Analysis of 65 Serologically Confirmed Cases. R. B. Dickerson, J. R. Newton and J. E. Hansen.—p. 277.
Aureomycin in Treatment of Systemic North American Blastomycosis. L. V. McVay Jr. and D. S. Carroll.—p. 289.
Tuberculous Pericarditis: Its Treatment with Streptomycin and Some Observations on Natural History of Disease. T. M. Myers and M. Hamburger.—p. 302.
Effects of Mercurial Diuresis in Patients with Ascites Due to Cirrhosis. J. G. Hilton.—p. 311.
Clinical Observations on New Oral Diuretic 1-Propyl-3-Ethyl-6-Aminouracil and Preliminary Studies on 1-Allyl-3-Ethyl-6-Aminouracil. A. Kattus, T. M. Arrington and E. V. Newman.—p. 319.

Antibiotic Treatment of H. Influenzae Meningitis.—Of 30 consecutive children between the ages of 3 and 51 months with bacteriologically confirmed meningitis due to Hemophilus influenzae type B, 18 were treated with aureomycin supplemented by sulfadiazine and 12 were treated with chloramphenicol. Fourteen in the aureomycin-treated group and five in the chloramphenicol group were less than 1 year old. Aureomycin was administered intravenously in a daily dosage of 8 to 40 mg. per kilogram of body weight. It was supplemented by aureomycin orally in daily doses of 40 to 60 mg. per kilogram of body weight in four to six divided doses for 14 days. An initial dose of 40 to 100 mg. of sulfadiazine per kilogram was administered intravenously, followed by 50 mg. per kilogram in 0.5% solution subcutaneously every eight hours for two to five days. Oral administration of sulfadiazine was instituted as soon as possible, and the patient received 150 to 300 mg. per kilogram daily for a total period of 21 days of sulfonamide therapy. Chloramphenicol was given for from two to three weeks. Oral dosage alone, 50 mg. per kilogram initially followed by 100 mg. per kilogram daily in four divided doses, was employed in six patients. Two patients received a dose of 10 mg. per kilogram in the form of a 25% solution of chloramphenicol in 50% dimethyl acetamide intravenously four times a day. This was followed by oral administration of the drug. Microcrystalline chloramphenicol suspended in isotonic sodium chloride solution was given intramuscularly to four patients in doses of 50 mg. per kilogram every 12 hours followed by chloramphenicol orally. Three of the 18 children treated with aureomycin and sulfadiazine died of their infection. Some residual neurological damage was observed in five of the surviving patients. No deaths occurred in the group treated with chloramphenicol, and only two patients showed residual neurological disturbances. The neurological complications had diminished several months later in four of the seven patients. No complications or residual damage were noted in the nine patients of both groups over 1 year of age who survived. Because of the difference in age distribution in the two groups, no distinction between the two types of treatment can be made. Chloramphenicol appeared to have certain advantages in treatment of these acutely ill children, many of whom were infants. No toxic manifestations that could be attributed to the medication were observed among any of the patients in this series. Subdural collections of fluid were often observed, and the importance of recognizing this complication is reemphasized.

Japanese B Encephalitis.—Of 299 American soldiers in Korea who had Japanese B encephalitis from July to October, 1950, 30 died and the remainder were evacuated to hospitals in Japan. Of 110 patients with similar clinical findings who were observed for an average of 10 weeks, subsequent serologic determinations yielded diagnostic complement fixation reactions in only 65. The findings in these groups were analyzed to determine the nature and course of Japanese B encephalitis, and to stress the factors that distinguish it as a clinical entity. These observations incompletely differentiate Japanese B encephalitis from other acute viral encephalitides, but they constitute a readily recognized "encephalitis syndrome." Characteristic of this syndrome were altered sensorium, mask-like facies, "thick" slow speech, coarse ocular tremor, relatively symmetric neurogenic paresis without corresponding sensory alterations or paralysis, and normal or increased deep tendon reflexes and/or abdominal reflexes, provided there was no profound depression of vital functions. The presence of four or more of these signs can probably be considered diagnostic of the Japanese B encephalitis syndrome. Of the 90% who survived in this series, 7% were mentally incapacitated at the end of three months. An additional 5% had partially disabling paralyses, usually originating in the lower motor neurons. Laboratory features not previously stressed are: spinal fluid pleocytosis persisting for more than seven weeks; polymorphonuclear cells in the spinal fluid in all patients examined during the first four days of the disease; regular elevation of the sedimentation rate with a mean of 35 mm. per hour (Wintrobe corrected), and slow development of specific complement-fixing antibodies so that diagnostic titers may not be reached for six weeks after onset. Despite lack of specific therapy for Japanese B encephalitis, the 10% mortality rate in the American soldiers was about one-third of that seen in the Japanese population. This difference was explained by the supportive care given the soldiers. Fluid replacement, gavage feeding, and vitamins were important. The most vital factor was maintenance of an adequate airway. This was often accomplished by proper positioning and use of a suction catheter. Convalescence was slow and prolonged hospitalization mandatory.

American Journal of Obstetrics & Gynecology, St. Louis

63:479-716 (March) 1952. **Partial Index**

Vesicovaginal Fistulas. B. Carter, L. Palumbo, R. N. Creadick and R. A. Ross.—p. 479.
Results of Treatment of Ovarian Malignancies. C. L. Randall and D. W. Hall.—p. 497.
*Endometriosis in Pregnancy, Clinical Observations. H. L. Gainey, J. E. Keeler and K. S. Nicolay.—p. 511.
Posthemorrhagic Shock in Newborn. G. Z. Wickster.—p. 524.
Use of Intra-Arterial Nitrogen Mustard Therapy in Treatment of Cervical and Vaginal Cancer. J. K. Cromer, J. C. Bateman, G. N. Berry and others.—p. 538.
*Efficacy of Rh Hapten Therapy in Prevention of Erythroblastosis. R. W. Marsters, R. T. F. Schmidt and M. E. Black.—p. 549.
Hodgkin's Disease and Pregnancy. H. L. Stewart Jr. and R. W. Monto. —p. 570.
Transverse Presentation: Experience with Transverse Presentation at Baltimore City Hospitals and University Hospital Over a Period of 10 Years. L. C. Gareis and J. C. Ritzenthaler.—p. 583.
Myomectomy: Surgical Technique and Results in Series of 1,150 Cases. A. M. Davids.—p. 592.
Mesodermal Mixed Tumor of Corpus Uteri. T. W. McElin and H. Davis Jr.—p. 605.
Varicose Veins of Pregnancy. D. J. Mullane.—p. 620.
Blood Sugar Values in Labor. J. B. Bernstine and T. H. Boysen III. —p. 627.
Fever in Endometriosis. I. Forman.—p. 634.
Evaluation of Cervical Biopsy in Diagnosis of Carcinoma. C. T. Beecham and J. Emich.—p. 645.
Culdoscopy. A. Decker.—p. 654.
Multiple Cancer, Primary in Female Genitals and Other Sites. A. G. Marrangoni and R. McKenna.—p. 660.
Critical Study of Efficacy of Jelly as Contraceptive. R. Finkelstein, A. Guttmacher and R. Goldberg.—p. 664.
Evaluation of Surface Sponge Biopsy in Cancer Detection Clinic with Special Reference to Use of Endometrial Sponge Biopsy Forceps. B. Diamond, N. Mitchell and E. Blum.—p. 668.

Endometriosis in Pregnancy.—Of 38 pregnant patients with external endometriosis, the uterosacral ligament was involved in 20, the ovary in 2, uterosacral ligament and ovary in 14, and the rectovaginal pouch and cervix in 1 each. The effect of pregnancy on the lesions was recorded subjectively and objectively

in 34. Postpartum examination of the 34 patients who went to term revealed objective improvement in 14 and no change in 20. Three patients, with ovarian, rectovaginal, and uterosacral ligament endometriosis, respectively, had almost total involution of what, prenatally, were extensive lesions. This effect of pregnancy persisted for eight months in the rectovaginal lesion and four years in the other two. Of 25 patients whose subjective complaints could be attributed to endometriosis, 20 noted improvement. It is impossible to attribute all of the benefits to the effect of pregnancy when the anatomic and functional changes that persist in the parous patient are considered. It is significant to note that the only two patients whose conditions were worse, subjectively or objectively, as a result of pregnancy had the rare complications of torsion of adnexa and ovarian pregnancy.

Rh Hapten Therapy to Prevent Erythroblastosis.—Rh hapten was employed in the treatment of 10 Rh-negative pregnant women who had given birth to at least one erythroblastotic infant. The existence of maternal immunization was corroborated by several Rh antibody titrations. Injections of Rh hapten were made intramuscularly into the gluteus maximus, and there were no discernible systemic reactions. Six received 100 mg. of Rh hapten per week, and four of these received 200 mg. each week near term. Three additional patients were given 200 mg. each week that was increased to 300 mg. at the 15th, 25th, and 30th weeks. Administration of 300 mg. was started in the seventh week in one patient but she aborted spontaneously in the 14th week. These weekly injections of Rh hapten caused no significant change in the apparent concentration of circulating Rh antibody. The patient whose pregnancy resulted in early spontaneous abortion and another who delivered a normal Rh-negative infant were eliminated in considering the results of treatment. In the remaining eight cases, there were five intrauterine deaths while a sixth infant was so severely affected that he died within a few minutes after birth. In the remaining two patients survival of the infants could possibly be ascribed to the administration of the sesame oil preparation of Rh hapten.

American Journal of Pathology, Ann Arbor, Mich.

165:171-318 (March-April) 1952

Bacteriologic Studies of X-Radiated Dog. F. W. Furth, M. P. Coulter and J. W. Howland.—p. 171.

Effect of Aureomycin and Terramycin on X-Radiated Rat. F. W. Furth, M. P. Coulter and J. W. Howland.—p. 185.

Pulmonary Hemorrhage: Experimental Studies. E. K. Ahvenainen and J. D. Call.—p. 193.

Experimental Endogenous Lipoid Pneumonia. P. Gross, J. H. U. Brown and T. F. Hatch.—p. 211.

Histopathology of Coxsackie Virus Infection in Mice: I. Morphologic Observations with Four Different Viral Types. G. C. Godman, H. Bunting and J. L. Melnick.—p. 223.

Liver Damage in Ulcerative Colitis. P. Kimmelstiel, H. L. Large Jr. and H. D. Verner.—p. 259.

Further Studies on Pathogenesis of Urate Calculi in Urinary Tract of White Rats. H. Ungar and R. Ungar.—p. 291.

The Spleen in Hypersplenism. R. J. Leffler.—p. 303.

*Lipid Deposition in Aortas in Younger Age Groups Following Cortisone and Adrenocorticotrophic Hormone. E. M. Etheridge and C. Hoch-Ligeti.—p. 315.

Lipid Deposition in Aortas of Young Persons Following Cortisone and Corticotropin Therapy.—An investigation of the changes in the aortas of patients who had received cortisone and/or corticotropin was stimulated by the finding of an excessively large amount of intimal lipid in the aorta of an 8-year-old child treated with cortisone. The adrenal cortex is known to affect cholesterol and other serum lipid levels, and a relationship between cholesterol metabolism and atherosclerosis is assumed. This study was restricted to patients under 21 years of age because lipid deposits of more than minimal degree are found in the aortic intima almost universally after the second decade. Thirty-four patients who had been treated with cortisone or corticotropin were studied at autopsy. Most of these patients had died of leukemia. Forty-three control cases were selected from patients who had received no cortisone or corticotropin; these patients had died of diverse causes, including 12 who died of leukemia. Deposition of lipid appeared to be increased in both the intima and media in patients under 11 years of age who received cortisone or corticotropin. After the age of 11, lipid was found so frequently in the controls that the difference in the two groups was equivocal. No correlation between the degree of change and the amount of hormone received was found, but there seemed to be some relation to the duration of treatment. There was no difference between the effects of cortisone and of corticotropin.

American Journal of Physiology, Baltimore

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Effect of Destruction of Thyroid Glands by Radioactive Iodine on Pancreatic Diabetes in Dog. W. B. Neal Jr., L. R. Dragstedt, G. R. Rogers and G. McKeague.—p. 29.

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Effect of Various Bile Acids on Hypercholesteremia Following Biliary Obstruction in Rat. S. O. Byers and M. Friedman.—p. 138.

Traumatic Shock: XX. Course of Hemorrhagic Shock in Dogs Treated by Peritoneal Irrigation or by Artificial Kidney. H. A. Frank, E. D. Frank, S. Jacob and others.—p. 140.

One-Stage Hepatectomy in Dog, Preserving Inferior Vena Cava. H. A. Frank and S. W. Jacob.—p. 156.

Action of Digitalis Glucosides on Isolated Frog Heart. S. Hajdu and A. Szent-Györgyi.—p. 171.

Inhibitory Effect of Vasopressin on Cardio-Accelerator Mechanism After Sino-Aortic Denervation. W. B. Youmans, H. V. Good and A. F. Hewitt.—p. 182.

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Bromides in Spinal Fluid and Serum. S. I. Patrick and G. S. Eadie.—p. 254.

Sleep Produced by Electrical Stimulation of Thalamus. K. Akert, W. P. Koella and R. Hess Jr.—p. 260.

Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

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Clinical Observations of Jonathan Hutchinson. V. A. McKusick.—p. 101.

Studies on Immunology of Spirochetoses: I. Effect of Cortisone on Experimental Spirochetosis. E. D. DeLamater, V. R. Saurino and F. Urbach.—p. 127.

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Id.: II. Application to Serodiagnosis of Syphilis. A. G. Osler and J. H. Strauss.—p. 154.

*Incidence of Positive Serologic Tests for Syphilis in Collagen Diseases. H. E. Zellmann.—p. 163.

Further Observations on Duration of Spirochetemia in Rabbits with Asymptomatic Syphilis. C. N. Frazier, A. Bensel and C. S. Keuper.—p. 167.

Treatment of Syphilis with Aureomycin and Chloromycetin. S. R. Taggart, M. J. Romansky and G. S. Landman.—p. 174.

Long-Term Observations of Hospitalized Paretic Patients. B. Dattner, D. M. Carmichael, L. DeMello and E. W. Thomas.—p. 179.

Five-Year Study of Antibiotics in Treatment of Granuloma Inguinale. R. B. Greenblatt, W. E. Barfield, R. B. Dienst and others.—p. 186.

Positive Tests for Syphilis in Collagen Diseases.—The records of 801 patients admitted to the Johns Hopkins Hospital between 1943 and 1950 with one of the "collagen diseases" (rheumatoid arthritis, rheumatic fever, disseminated lupus erythematosus, periarteritis nodosa, dermatomyositis, or scleroderma) were investigated to determine the incidence of positive serologic reactions for syphilis. Of 82 seropositive patients only 20 had proved syphilis. The incidence of positive serologic tests for syphilis was twice as great among patients with disseminated lupus erythematosus and periarteritis nodosa as among those with rheumatoid arthritis and rheumatic fever. In the lupus-periarteritis group combined, the incidence of proved syphilis was 5.0%; of possible biological false positive reactors, 13.9%. Comparable figures for the combined rheumatoid arthritis and rheumatic fever group are 1.9% and 6.5%. Thus in both groups, there were a number of seropositive patients in whom the existence of syphilitic infection could not be verified, and who are, at least on clinical grounds, possible biological false positive

reactors. The fact that verification of the biological false positive status of most of the seropositive reactors in this and other reported series of cases of collagen disease has not been attempted by means of the treponemal immobilization test, impairs the validity of any conclusion. It can only be suggested that biological false positive reactions probably do occur frequently in patients with these diseases, especially in disseminated lupus erythematosus and periarteritis nodosa.

Antibiotics & Chemotherapy, Washington, D. C.

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*Terramycin in Treatment of Trichomonas Vaginalis Vaginitis: Report of 21 Cases. H. J. Greene.—p. 119.
Studies on Bacterial Resistance to Furacin. R. E. Asnis, F. B Cohen and J. S. Gots.—p. 123.
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Alpha Streptococcus Meningitis: Report of Case Successfully Treated with Chloramphenicol. R. C. Hagan, J. E. Cohn and W. C. Ebeling. —p. 147.
Mode of Action of Terramycin. Y. Miura, Y. Nakamura, H. Matsudaira and T. Komeiji.—p. 152.
Observations on Whooping Cough and Aureomycin Treatment. M. Hasselmann-Kahlert.—p. 159.

Terramycin in Trichomonas Vaginitis.—Twenty-one patients with Trichomonas vaginalis vaginitis were treated with terramycin vaginal suppositories. All patients had a profuse yellow-green, foamy, mucopurulent discharge from the vagina, and the clinical appearance of the vaginal and cervical mucosa was characteristic of the disorder. Each patient was instructed to empty her bladder before retiring at night and then to insert one terramycin vaginal suppository. No tampon was permitted, but a napkin was used at times to protect clothing. In order to prevent dilution of the medication, douching was not allowed. The melted debris of the suppository streamed out slowly in the erect position but gentle cleansing during voiding was sufficient to take up this discharge. Cotton cleansing, after voiding, was insisted upon. Coitus was interdicted. This routine was carried out for seven nights. If the menstrual period occurred, treatment was continued in the same manner. At the end of seven days, vaginal inspection generally revealed a clean pale pink vaginal mucosa after removal of residual melted suppository. The discharge had disappeared completely, and the cervix appeared normal. A vaginal smear was negative for Trichomonas vaginalis in each case. All the patients stated that they were completely free of the intolerable itching and discharge. Four patients complained of slight itching within one week after cessation of treatment. Examination revealed no recurrence, and the itching was relieved with a warm boric acid application.

Georgia Medical Association Journal, Atlanta

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Clinical Electroencephalography: Diagnostic and Prognostic Aid. D. S. Bickers.—p. 99.

Iowa State Medical Society Journal, Des Moines

42:135-200 (April) 1952

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Persistent Occiput Posterior. J. H. Randall.—p. 148.
Intervertebral Disc Herniations in Thoracic Region. R. L. Imler and A. L. Sahs.—p. 151.
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Iowa's Program for Crippled Children. R. R. Rembolt.—p. 171.

Journal of Allergy, St. Louis

23:95-192 (March) 1952

Differential Cell Counts in Blister Fluid of Allergic Eczematous and Irritant Bullous Lesions. R. L. Baer and M. Yanowitz.—p. 95.
*Cardiovascular Allergy Due to Penicillin, Sulfadiazine, and Bacterial Sensitization: Results of Treatment with Cortisone and ACTH. J. Harkavy.—p. 104.
Immunophysiology of Immune Reactions: Alteration in Thiocyanate Space in Quantitative Passive Transfer Experiments in Rabbits. J. K. Aikawa and E. L. Rhoades.—p. 123.
Influence of Single Dose of ACTH on Atopic and Histamine Skin Reactions. K. L. Bowman, B. B. Siegel and M. Walzer.—p. 130.
Effect of ACTH on Distribution of Eosinophils in Blood and Peribronchial Tissue of Guinea Pigs. M. Samter, E. E. Erickson and M. A. Kofoed.—p. 140.
Practical Value and Limitations of Respiratory Function Tests. R. D. Berke, S. J. Presley, J. R. Necheles and others.—p. 151.
Mixed Grass Pollen Vs. Pure Timothy Extract in Uncontrolled Summer Hay Fever Patients. L. Sternberg.—p. 163.
Interrelation of Variable Factors Associated with Slide Counts of Hormodendrum Spores. A. M. Targow.—p. 166.
Effect of Trypan Blue on Susceptibility to Histamine. G. L. Rohdenburg and L. Farmer.—p. 172.
Reactions Following Use of Terramycin Troches: Controlled Study. A. H. Kutscher, J. Budowsky, S. L. Lane and N. W. Chilton.—p. 177.
Rhinitis Medicamentosa. J. S. Walker.—p. 183.
Precision Scratching with Micro-Scratcher. I. R. Morrison.—p. 187.

Cortisone and Corticotropin in Cardiovascular Allergy.—Histories are presented of 4 atopic patients with hyperergic vascular disease characterized by extensive purpura, pulmonary infiltrations with eosinophilic myocarditis, hepatosplenomegaly and renal involvement. All of these patients had a history of vasomotor rhinitis, sinusitis and asthma. Because of the intercurrent respiratory infections they received antibiotic therapy consisting of injections of penicillin in varying amounts as well as sulfadiazine. Penicillin hypersensitiveness appeared to have been responsible for the clinical syndrome in the first two patients. Allergy to sulfadiazine and bacterial infection was regarded as the probable exciting factors in the vascular disease of the third patient, and bacterial infection was suspected in the fourth. Concurrent sensitivity to other antibiotics such as aureomycin and chloramphenicol may have acted synergistically to accentuate the morbid process in all four patients. Cortisone and corticotropin proved effective in controlling the reversible phases of the disease, such as eosinophilic pulmonary infiltrations, purpura, joint pains and fever but failed to prevent the progress of the basic hyperergic vascular disease affecting the myocardium and the kidneys. The lesions of these organs became irreversible and three of the patients died. Autopsy findings in one patient are described.

Journal of Thoracic Surgery, St. Louis

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Minute Carcinoma of Major Bronchi: Follow-Up Report. A. H. Aufses and H. Neuhof.—p. 219.
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Transpleural Bronchotomy. A. Goldman.—p. 237.
Natural History of So-Called Tuberculomas. R. Grenville-Mathers. —p. 251.
Lobectomy and Pneumonectomy in Tuberculosis: Report of 54 Cases. L. Johansson and L. G. Uggla.—p. 253.
Angiographic Studies After Pulmonary Resection. C. R. Pacheco and H. del Castillo.—p. 262.
Spontaneous Contralateral Pneumothorax Complicating Thoracic Surgical Procedures. T. J. Beno and W. Weisel.—p. 272.
Intrathoracic Meningocele: Excision, with Three and One-Half Years Follow-Up. P. Ciaglia.—p. 283.
Laceration of Aorta: Case Report of Successful Repair 48 Hours After Injury. E. J. Beattie Jr. and D. Greer.—p. 293.
Arteriovenous Fistula of Aortic Arch. W. W. McCook.—p. 299.
*Experimental Evaluation of Catgut as Vascular Suture Material and Report on Its Clinical Use. R. A. Deterling Jr., C. C. Coleman Jr., J. Kee and G. H. Humphreys II.—p. 303.

Catgut as Vascular Suture Material.—Fine sizes of braided silk and medium chromic catgut were used to implant vascular grafts into 20 dogs. By using both suture materials in the same animal, a comparative study was possible. The anastomoses were examined after 1 to 168 days. Grossly, the chromic catgut began to fragment in about four weeks. At times the fibrosis at the silk suture line seemed greater than that with catgut. Occlusion of some of the grafts by thrombosis was believed to be related to the use of homografts in these dogs rather than to the type of

suture material. Microscopically, the early cellular reaction about the catgut was greater than that about silk in some specimens. In others, comparable but varying degrees of reaction were found about both types of suture. After a few weeks, excellent fibrous union occurred in all instances. Residual fragments of catgut were observed for several months. Occasionally, granuloma formation was noted about the silk strands. Medium chromic catgut was used for interrupted sutures in three children. In two of them, aged 21 months and 5½ years, a coarctation was excised and end-to-end aortic anastomosis carried out. In the other, aged 4 years, a splenorenal shunt was performed. The clinical result in all three has been satisfactory to date.

Journal of Urology, Baltimore

67:235-404 (March) 1952. **Partial Index**

Structure of Glomerular Tuft. A. Trabucco and F. Marquez.—p. 235.
Pyogenic (Foam Cell) Granuloma in Case of Pyonephrosis. F. G. Mack and M. L. Mador.—p. 258.
Diverticulum of Ureter: Report of Another Authentic Case. A. B. McGraw and O. S. Culp.—p. 262.
Intussusception of Ureter Associated with Benign Polyp. H. V. Morley, E. J. Shumaker and L. W. Gardner.—p. 266.
Spontaneous or Nontraumatic Extravasation from Ureter. L. A. Orkin. —p. 272.
Uretero-Intestinal Anastomosis. L. W. Riba.—p. 284.
Fibroma of Bladder. E. E. Sexton.—p. 309.
Primary Carcinoma of Female Urethra. G. A. Hahn.—p. 319.
*Carcinoma of Penis. H. C. Harlin.—p. 326.
Retroperitoneal Lymph Node Resection: Intercosto-Inguinal Approach. E. L. Lewis, R. E. Johnston, R. B. Rowe and J. C. Kimbrough. —p. 338.
Granuloma of Testis of Unknown Etiology. W. R. Lee and A. Nettleship.—p. 342.
Interstitial Cell Growth of Testis: Evidence for Origin of This Cell from Seminiferous Epithelial Cells. W. W. Christeson and A. Nettleship. —p. 350.
Cysto-Urethrograms Before Prostatectomy. A. W. Boone.—p. 358.
*Osteitis Pubis Treated with Adrenocorticotrophic Hormone. V. F. Marshall, W. F. Whitmore Jr., A. T. Petro and others.—p. 364.
Lesions of Ischium and Pubis in Pregnancy Resembling Osteitis. A. Golden.—p. 370.
Aureomycin in Urinary Tract Infection. W. I. Metzger, L. T. Wright, F. R. DeLuca, and others.—p. 374.
Use of Helium in Perirenal Insufflation: Preliminary Reports. B. Levine. —p. 390.
Use of Carbonated Beverage as Aid in Pediatric Excretory Urography. O. C. Berg and D. H. Allen.—p. 393.

Carcinoma of Penis.—Harlin discusses penile cancer on the basis of published reports and of 21 cases observed at a Veterans Administration Hospital during a 10 year period. Penile cancer constitutes from 1 to 3% of all carcinomas in men. Although the etiology is obscure, hard, retained, inspissated smegma causes irritation and predisposes to development of penile cancer. Jews and Mohammedans who undergo ritualistic circumcision in infancy or childhood have complete or relative protection from penile cancer, which occurs almost exclusively in the uncircumcised, particularly in those with phimosis, and occasionally in those circumcised in adult life. Two types of carcinoma of the penis are described, the papillary and the infiltrating. Treatments include surgery, electrosurgery, deep x-ray and radium therapy and combinations of these treatments. Harlin favors the conservative surgical approach, the principles of which are as follows: (1) simple amputation approximately 1.5 cm. to 2.5 cm. proximal to any visible or palpable evidence of disease; (2) use of a perineal urethral opening only in instances where soilage by urine would otherwise occur (as with a short residual stump or in obese persons); (3) groin dissection in patients with adenopathy due to metastases, after the primary tumor has been treated. Three of the aforementioned 21 patients had metastases when the disease was first diagnosed. One of these who had simple amputation with bilateral groin dissection was alive 3½ years later. The other two died of generalized metastases two and four years, respectively, after radical penile amputation, bilateral groin dissection, and postoperative radiation. Two of the 18 who had no evidence of metastases when the primary tumor was diagnosed died. One died of hypertensive cardiorenal disease eight years following simple amputation. There was no evidence of cancer at death. The other patient died three days after total amputation in uremia secondary to receipt of incompatible blood. Only one of the 16 surviving patients has evidence of penile carcinoma.

Corticotropin in Treatment of Osteitis Pubis.—Most cases of osteitis pubis, one type of inflammation of the periosteum, bone, cartilage and ligamentous structures of the anterior half of the pelvic girdle, have followed a suprapubic operation on the bladder or prostate, but the disease has been observed following nonoperative disorders, such as pyelonephritis. The clinical and radiographic manifestations usually appear in two to six weeks. The process typically begins at the symphysis and tends to involve the ischii. Roentgenographically a motheaten bony destruction, apparently beginning at the symphysis, is characteristic in association with evidence of periosteal reaction (spurs and osteophytes) and widening of the cartilagenous space. In severe cases the patient is incapacitated with pain for many weeks or months. However, the disease is essentially self-limited. Therapeutic efforts have usually produced equivocal results. Marshall and associates employed corticotropin (ACTH) because of the clinical similarity of the manifestations in one case to those of an acutely inflamed rheumatic joint. They feel that the dramatically prompt effect obtained in two cases must be attributed to the adrenocorticotropic hormone. The clinical relief appears to persist after discontinuance of hormonal therapy, as if the process had been abruptly reversed into the healing phase, a sort of premature cure of a self-limited disease. In the one chronic and complicated case a limited benefit seems to have been obtained. Further studies, including longer follow-up of these cases, may reveal unknown limitations of this therapy.

Kansas Medical Society Journal, Topeka

53:105-164 (March) 1952

Working Program for Care and Treatment of the Hypertensive Patient. E. G. Dimond.—p. 105.
Surgical Injuries of Urinary Tract. R. W. Stockton and R. H. Owens. —p. 107.
Harelip and Cleft Palate: Modern Trends in Management. D. W. Robinson.—p. 114.
Terminal Bronchiolar or "Alveolar Cell" Carcinoma of Lung: Case Report. H. H. Dunham and V. G. Smith.—p. 117.
Two Attacks of Endocarditis Caused by Different Microorganisms. J. L. Stockard.—p. 122.
Intravenous Avertin: Preliminary Report. R. W. Bumgarner, R. L. Pokorny, E. T. Morch and P. H. Lorhan.—p. 124.
Method for Rectal Use of Nisulfazole in Chronic Ulcerative Colitis. W. R. Durkee.—p. 127.
Hemorrhagic Transfusion Reactions. C. H. McCroskey and S. R. Friesen.—p. 129.

Maine Medical Association Journal, Portland

43:65-100 (March) 1952

Leukemia, with Special Emphasis on "Leukemia in Infants." R. A. Beliveau.—p. 65.
Death Following Spinal Anesthesia. D. Martel.—p. 68.
Repair of Extensive Ventral Hernias with Tantalum Gauze Mesh. A. F. DuMais.—p. 70.
Review of Adrenal Physiology and Related New Drugs. N. O. Gauvreau. —p. 73.
Carcinoma of Prostate. S. Bluhm.—p. 75.
Multiple Pulmonary Emboli Complicating Congestive Heart Failure. W. B. Manter.—p. 84.
Treatment of Soft Tissue Injury Complicating Compound Fractures. J. H. Giesen.—p. 85.
Treatment of Neoplasms with Nitrogen Mustards. C. L. Holt and J. E. Porter.—p. 86.

Maryland State Medical Journal, Baltimore

1:49-120 (Feb.) 1952

Private or Government Control of Practice of Medicine. W. B. Moyers. —p. 51.
Panel Discussion: Peptic Ulcer. H. B. Stone, S. M. Mellinkoff, J. T. Howard, J. E. Finesinger, D. M. Gould and C. R. Edwards.—p. 53.

MEDICOLEGAL SYMPOSIUM—DRUG ADDICTION

Judicial Administration of Violations. J. Sherbow.—p. 78.
Care, Treatment and Rehabilitation—Narcotic Drug Addicts. J. V. Lowry.—p. 83.
Problems Presented to the Youth of the Community by Traffic in Drugs. R. C. Thomsen.—p. 87.
Diagnosis of Chronic Viral Hepatitis. V. M. Sborov.—p. 92.

1:121-174 (March) 1952

Past—Present—Future. J. A. Chatard.—p. 146.
Committee for the Study of Pelvic Cancer. B. C. Compton.—p. 150.
Unity for Faith. A. R. Koontz.—p. 153.

New England Journal of Medicine, Boston

246:317-354 (Feb. 28) 1952

*Surgical Significance of Duodenal Diverticula. R. B. Cattell and T. J. Mudge.—p. 317.
Unusual Case of Lower-Nephron Nephrosis Following Exposure to Carbon Tetrachloride. R. C. Partenheimer, W. J. Boyer and D. S. Citron.—p. 325.
Tuberculosis Localized in Vermiform Appendix. H. Morrison, C. G. Mixter, M. J. Schlesinger and W. B. Ober.—p. 329.
Coronary Thrombosis in Diabetes Mellitus: Analysis of 54 Cases. J. W. Robinson.—p. 352.
Trauma of Athletics. A. Thorndike.—p. 335.
New Vein Stripper. H. Mahorner.—p. 340.

Surgical Significance of Duodenal Diverticula.—In an effort to evaluate surgical treatment of duodenal diverticula, Cattell and Mudge reviewed the cases of 25 patients who were subjected to operation at the Lahey Clinic in the last 10 years. At this clinic the diagnosis of duodenal diverticulum is made about 150 times a year, but in only about 20 of these is the diverticulum considered a possible source of the patient's symptoms, and only 2 or 3 of these 20 are surgically treated. In cases in which other pathological changes are present, the decision to remove the diverticulum is deferred until the time of surgery. Then, after removal of the gallbladder, exploration of the common bile duct, or whatever the primary procedure is, the diverticulum is dissected free, and its size, shape and location and the presence of inflammation or retained food are ascertained before the final decision is made. It may be decided not to remove the sac. In six cases the diverticula were intimately associated with the pancreas, and in three of these were actually embedded. Damage to the pancreas is difficult to avoid in dissection of these diverticula. The two deaths in this series both resulted from pancreatic enzyme leakage. Fifteen of the 25 patients were entirely relieved of their symptoms. Four showed some improvement but were not completely cured. Six patients, including the two who died, had return of symptoms and are classified as failures. In only 17 of the 25 cases can the results be considered to be purely on the basis of diverticulum removal. The results in these 17 were excellent in 9, fair in 3, and poor in 5. A number of case histories are presented, and the authors stress that surgical intervention should be carried out only after a careful study and a trial of medical treatment. The removal of duodenal diverticula is indicated in less than 5% of those discovered.

246:355-390 (March 6) 1952

Epidemic-Typhus Antibodies in Human Subjects in Boston, Massachusetts. E. S. Murray, S. Cohen, J. Jampol and others.—p. 355.
*Elastic Stockings in Prevention of Pulmonary Embolism: Preliminary Report. R. W. Wilkins, G. Mixter Jr., J. R. Stanton and J. Litter.—p. 360.
Stress Incontinence Treated by Vesicourethropexy. L. H. Doolittle.—p. 364.
*Industrial Dermatitis Due to Contact with Brass. G. E. Morris.—p. 366.
Diseases of Thyroid Gland (Part I). O. Cope.—p. 368.

Elastic Stockings to Prevent Pulmonary Embolism.—External pressure of 10 to 15 mm. Hg applied to the leg of a supine person decreases the volume of the limb, presumably by reducing the volume of the veins. The velocity of blood flow in the veins during such local compression is accelerated, because the mean linear velocity of blood flow is inversely proportional to the cross-sectional area. Because of the belief that acceleration of flow would decrease the likelihood of thrombosis in the calf veins, it was decided to try compression of the legs with elastic stockings as a prophylactic measure against phlebothrombosis and pulmonary embolism in hospitalized persons. It was hoped that even if elastic compression did not completely prevent phlebothrombosis, it might cause the thrombi that did form to be smaller and hence less likely to cause fatal pulmonary embolism. An alternate case study of hospitalized patients was instituted. Elastic stockings were chosen rather than elastic leg bandages, because the former were more easily and uniformly applied at correct pressures. Early in the study pulmonary edema developed in one patient with severe congestive heart failure, renal insufficiency, and peripheral edema soon after application of elastic stockings, and such patients were thereafter excluded from the study. The presence of ulceration or inflammatory lesions on the leg, arterial insufficiency, the presence of casts or elastic bandages, or, a patient's refusal to cooperate were contraindications to the elastic stocking experiment. Among the 2,346 patients who wore the stockings, there were no deaths from pulmonary embolism although there were two cases of nonfatal pulmonary embolism. Among 2,395 control patients there were 4 deaths from pulmonary embolism, and 12 cases of nonfatal pulmonary embolism. Wearing elastic stockings does no harm if they are applied loosely (at 10 to 15 mm. Hg pressure) and smoothly, and if they are omitted when contraindicated. Further investigation of this method for the prophylaxis of pulmonary embolism seems warranted.

Dermatitis Due to Contact with Brass.—Morris reports on five patients with contact dermatitis from brass. One patient had dismantled brass electrical fixtures. A rash had appeared on the right foot and had subsequently spread to both feet and both hands. Both palms and wrists were red and scaling and showed dried desquamating patches. Both soles were red and showed extensive vesiculation, with swelling and edema. Tests with the shoe leathers and linings were negative and scrapings were negative for fungi. Patch-tests with the brass parts with which the patient worked produced positive reactions. The small washers had continually fallen into her shoes and had started the rash on her soles. After she was treated with cold compresses and soaks and removed from contact with brass, the condition slowly improved and cleared completely after about three months. Chemical analysis of the brass showed about 20% zinc, 70% copper, 1% tin, 2% iron, 1% chrome and 3% lead, with traces of manganese, nickel and silver. Skin tests with brass six months later were still positive. After presenting brief histories of four other patients, Morris points out that brass is well known as a cause of metal fume fever, and he feels that dermatologists should consider it as a possible cause of some unusual dermatoses.

New York State Journal of Medicine, New York

52:513-640 (March 1) 1952

*Radiophosphorus (P^{32}) in Diagnosis and Treatment. B. J. Duffy Jr. and J. W. Howland.—p. 551.
Maintenance Mercuhydrin Therapy in Prevention of Pulmonary Edema Associated with Hypertensive and Arteriosclerotic Heart Disease. M. L. Gelfand.—p. 555.
Fatal Gastrointestinal Hemorrhage: Analysis of 44 Cases. J. P. West and C. S. Oakman.—p. 558.
Prolapse of Gastric Mucosa: Clinical and Radiologic Entity. F. Elias and S. A. Kornblum.—p. 561.
Importance of Adequate Excision of All Incompetent Perforator Vessels in Surgical Treatment of Varicose Veins: Use of New Marking Ink to Delineate Varices. R. A. Nabatoff.—p. 563.
Physiologic Principles in Surgical Management of Peptic Ulcer. C. J. Jones.—p. 566.
Furacin Soluble Dressing in Treatment of Ingrown Toenails. L. Wirth.—p. 568.
Some Biologic Considerations in Treatment of Breast Carcinoma. M. M. Black and F. D. Speer.—p. 569.
Clinical Evaluation of Methylparafynol as Soporific Agent. J. Chevalley, N. Heminway, G. Meyer and others.—p. 572.
*Tetraethylammonium Chloride in Treatment of Coronary Artery Disease. I. Hirshleifer, G. Schwartz, H. J. Fuerst and A. Fankhauser.—p. 575.
Pyribenzamine in Treatment of Nonspecific Upper Respiratory Infections. G. A. Cronk and F. N. Marty.—p. 579.
Some Clinical Aspects of Digitalis Intoxication. L. J. Giuffra and Hsiang Len Tseng.—p. 581.

Radiophosphorus (P^{32}) in Diagnosis and Treatment.—Duffy and Howland feel that the potential utility of radiophosphorus and other radioisotopes in diagnosis and treatment can be only partially assessed at this time. Radiophosphorus (P^{32}) has a half-life of 14.3 days, which allows for shipment, standardization, and preparation of doses without prohibitive loss of material. P^{32}, unlike the gamma-emitting I^{131}, emits only beta rays, which have a very short range (from 3 to 4 mm.) in tissue. It is received as a solution of disodium hydrogen phosphate or phosphoric acid with a specific activity of 5 to 7 mc. per cubic centimeter. The amount of radiation from 1 mc. of P^{32} in an adult weighing 70 kg. is proportional to the dosage of external radiation that is given in the treatment of blood diseases. Following either oral or intravenous administration, P^{32} initially localizes in erythrocytes, with an increasing concentration in leukocytes after 48 hours. This is most marked in leukemic

blood, with P^{32} concentration in leukocytes four to five times as great as in erythrocytes one week after administration. There have been scattered reports of patients with lymphosarcoma, multiple myeloma, occasional carcinomas, and even rheumatoid arthritis being benefited by P^{32} treatment. These results are inconstant, usually evanescent, and duplicated by similar reports with other chemotherapeutic agents. Polycythemia vera and chronic leukemia are the two conditions in which P^{32} treatment may be definitely indicated. The uptake of P^{32} by neoplastic tissue can also be utilized for the diagnosis of cancer. Investigations on the diagnostic use have been interesting but of limited clinical application. Most of the work with P^{32} has been in the field of basic scientific investigation. Some of these observations may well be developed into practical clinical procedures, but it seems most likely that P^{32} will continue to serve primarily as a research tool.

Tetraethylammonium Chloride in Coronary Artery Disease.—The possibilities of using tetraethylammonium chloride in treatment of vasospastic diseases have been studied by a number of investigators since 1945. The authors of this report used this drug in 23 patients with severe coronary insufficiency with and without myocardial infarction and in a few cases of intractable pain of acute myocardial infarction. The intramuscular route of administration is preferable to the intravenous route. The initial dose of 300 to 500 mg. was given daily for three days, and after that the dosage was individualized, depending on the relief of symptoms, amount of fall in blood pressure, and untoward side effects. No severe secondary effects were observed. Efforts were made to establish a maintenance dose on a weekly or biweekly basis. In most cases this was accomplished with the dosage ranging between 200 and 900 mg. per week. All patients experienced relief of pain, as judged by a decrease in the number and severity of attacks and also by an increase in work capacity. The drug is suggested for relief of severe pain of acute myocardial infarction. Four cases are discussed in which electrocardiograms represent the various types of cases. The breaking of a reflex arc at the autonomic ganglia and the response of sympathetically denervated structures to small doses of circulating epinephrine are suggested as factors in the action of the drug. The authors feel that tetraethylammonium chloride has a place in the treatment of the pain of coronary artery disease, especially in patients who have failed to respond to the usual measures.

52:641-784 (March 15) 1952

Incidence of Benign and Malignant Disease of Female Pelvic Organs. C. T. Javert, E. E. Kramer and F. A. Macdonald.—p. 701.
*Herpes Zoster: Its Treatment with Protamide. F. C. Combes and O. Canizares.—p. 706.
Observations on Eosinophil Count. M. H. Robbins, E. C. Klein and L. Geller.—p. 709.
Massive Hemorrhage from Peptic Ulcer. H. L. Skinner and L. S. Rolufs. —p. 713.
Some Problem of Traumatic Causal Relationship in Development of Lumbar Disk Hernia. J. H. Siris.—p. 717.
Prevention of Miscarriage. C. H. Birnberg, D. A. Sherber and S. H. Livingston.—p. 720.
Paroxysmal Auricular Tachycardia. M. H. Morris.—p. 723.
Toxic Results of Anticoagulant Therapy. H. Berman and F. S. Mainella. —p. 725.
Dramamine Preanesthetic Medication. B. W. Zoffer and P. H. Sechzer. —p. 728.
Management of Varicose Veins and Their Related Problems During Pregnancy. L. K. Stalker.—p. 729.
Prevention and Management of Congenital Syphilis in New York City. H. M. Wallace, A. Jacoby and E. M. Gold.—p. 731.

Herpes Zoster.—Protamide, a denaturated, proteolytic enzyme obtained from the mucosal layer of hog stomach, was used in treatment of 30 men and 20 women with active herpes zoster. Protamide was administered intramuscularly as a sterile, colloidal solution, the intervals between injections varying from six hours to two or three days. This routine was determined largely by the degree of clinical response and relief of pain. The total doses varied from 1.3 to 24 cc. Results were excellent in 29 of the 50 patients treated, satisfactory in 11, and unsatisfactory in the remaining 10. Improvement in the patients with favorable responses was almost immediate. The average number of injections required in the group with excellent results was 3.4, and in the group with satisfactory results 5.9. The disease was unusually severe in almost all of the patients with unsatisfactory results, but in some of them brief periods of relief from pain followed each injection and occasionally persisted for several hours. There were no untoward reactions or evidence of toxicity.

Ohio State Medical Journal, Columbus

48:193-288 (March) 1952

Verification Test for Pseudosyphilitic Reactions. H. Hecht.—p. 213.
Report of Two Cases of Late Abdominal Pregnancy. J. C. Jarrett. —p. 219.
Congenital Cleft of Palate. B. C. Martin and J. C. Trabue.—p. 222.
Lithopedion Pregnancy. J. H. McClure and J. W. W. Epperson.—p. 225.
*Training in Resuscitation of Heart. R. M. Hosler.—p. 228.
Relationship of Proved Histoplasmosis to Histoplasmin Skin Sensitivity in Ohio. S. Saslaw and J. A. Prior.—p. 229.
Obstructive Uropathy as Cause of Hypertension (Case Report). G. C. Poore.—p. 232.

48:289-392 (April) 1952

The Eye in Diagnosis of General Diseases. L. V. Kogut.—p. 305.
Chronic Bronchitis and Acute Bronchiolitis in Adults. J. A. Prior. —p. 310.
Census of Hospitalized Polio Patients, August 1951; Summary and Interpretation. National Foundation for Infantile Paralysis.—p. 315.
Acute Immunopancytopenia with Interesting Complications. G. S. Belaval. —p. 318.
Surgical Treatment of Elephantiasis of Leg: Report of Case. J. J. Longacre and W. T. Swartz.—p. 324.

Training in Resuscitation of the Heart.—Hosler describes a practical two day training course in emergency treatment of cardiac arrest during a surgical procedure. Since enrollment is limited, personal instruction is possible. The resuscitation procedure is separated into two distinct steps, namely, (1) reestablishment of the oxygen system, and (2) restoration of the heart beat. A definite plan is necessary if the surgeon is to succeed with resuscitation. The course stresses the things to do and not to do during the critical moments. It focuses attention on the oxygen system and not on the heart beat. In the first animal experiment the heart is permitted to stop in standstill, or asystole, by a breakdown of the oxygen system for a period longer than the safe time limit, thought to be three to five minutes. In the second experiment, the heart is placed into ventricular fibrillation by an electrical shock. With counter shock equipment the heart is restored to normal rhythm. These are the two conditions with which the surgeon is confronted during cardiac arrest. The animals are observed and examined on the following day. At the final session the members practice cardiac massage. The methods of massage are carried out in such a way that each member can observe his own technique as he watches a continuous writing and recording of the effective blood pressure that he is sustaining.

Pediatrics, Springfield, Ill.

9:263-386 (March) 1952

*Disorders of Glycogen Metabolism, with Special Reference to Glycogen Storage Disease and Galactosemia. W. H. Langewisch and J. A. Bigler.—p. 263.
*Use of BCG Vaccine in New Diagnostic Test for Tuberculosis. E. Friedman and I. Silverman.—p. 280.
Chronic Hemolytic Anemia in White Child Due to Thalassemia and Sicklemia, with Genealogic Survey. C. F. Wasserman, V. R. Phelps and A. J. Hertzog.—p. 286.
Exogenous Hemochromatosis in Mediterranean Anemia. A. M. Fruman, S. Waldman and P. Morris.—p. 290.
Osteoid Osteoma in Childhood. H. M. Purcell, S. D. Mills and P. R. Lipscomb.—p. 295.
Chemical Comparison of Normal Meconium and Meconium from Patient with Meconium Ileus. D. J. Buchanan and S. Rapoport.—p. 304.
Gastrointestinal Allergy in Infancy: Significance of Eosinophiles in Stools. A. H. Rosenblum and P. Rosenblum.—p. 311.
Susceptibility of Hemophilus Parapertussis to Certain Antibiotics. E. Day and W. L. Bradford.—p. 320.
Coagulation Studies in Newborn Infant: II. Erythroblastosis Fetalis. R. M. Heyn, I. H. Rozenfeld, B. J. Grossman and J. D. Stuart. —p. 327.

Disorders of Glycogen Metabolism.—Five patients between the ages of 7 weeks and 19 months with disorders of glycogen metabolism are reported on. Two had glycogen storage disease of the liver, two had glycogen storage disease of the heart, and one had galactosemia. Clinical and laboratory evidence of the hepatic type of glycogen storage disease consisted of pronounced hepatomegaly, rapid development of hypoglycemia and keto-

nuria when food was withheld, and failure of the blood sugar level to respond to subcutaneously injected epinephrine. The presence of abnormally large amounts of glycogen in the liver was confirmed by biopsy in one of these two patients. Treatment of one of these patients with corticotropin (ACTH) resulted in disappearance of hypoglycemia and acetonuria during the therapy. In the two patients with glycogen disease of the heart, the heart was enormously enlarged. This type of disorder is invariably fatal, and both of the authors' patients died. Necropsy revealed large amounts of glycogen in the heart, liver, and kidneys. The electrocardiogram taken in one of the two patients revealed combined heart strain accompanied by inversion of the T waves and an abnormally depressed S-T segment in all limb leads. The infant with galactosemia (galactose diabetes) had massive hepatomegaly and protuberant abdomen. Albuminuria and melituria were confirmed by repeated urinalyses. Bilateral nuclear cataracts were noted. The urinary sugar was nonfermentable and definitely galactose. The glucose tolerance curve was high and prolonged due to high blood galactose levels. Continuous weight gain and excellent general condition with some decrease in the size of the cataracts followed use of a hypoallergenic (lactose-free) formula (nutramigen®). Although the pathological manifestations of the five patients differed, they had one common condition; they all had evidence of inborn defective glycogen metabolism. The exact pathogenesis of this condition is still in doubt. Presumably there is a defect in the enzymatic conversion of glucose or galactose to glycogen and its subsequent reversion back to glucose. Different enzyme systems seem to be involved in each entity.

BCG Vaccine in New Test for Tuberculosis.—Mantoux tests were done on 91 children between the ages of 4 and 12 years using old tuberculin in a dilution of 1:10,000 (0.01 mg.). Negative reactors were retested with a 1:100 (1.0 mg.) solution of old tuberculin. All the children were then tested by making two punctures through a drop of BCG vaccine applied to the arm. The 39 Mantoux-positive children developed papules during the first six days after inoculation with BCG. The 46 tuberculin-negative children gave a late reaction to BCG in 12 to 20 days, similar to that seen in uninfected persons who are BCG-vaccinated according to the method of Rosenthal or Birkhaug. Eight children gave no reaction to BCG, possibly because of poor technique of vaccination. In four children false positive reactions were elicited with old tuberculin. These were easily differentiated by demonstration of a late reaction with the BCG test. Thirty-four of the negative reactors to both the BCG and Mantoux tests were retested one year later and remained negative to both tests, indicating that the amount of BCG used in doing the test is usually not sufficient to convert a negative reactor into a positive one. The number of children studied is too small to justify any final conclusions about the role of BCG in routine tuberculin testing, but the authors feel that their findings together with those of other investigators indicate that BCG vaccine is a more sensitive and more specific test than the ordinary tuberculin test. The BCG test therefore should be of value when the authenticity of a "positive tuberculin test" is doubted; in cases of tuberculin anergy in which clinical evidence seems to indicate tuberculous infection despite a negative tuberculin test; to detect "infratuberculin allergy," i. e., early reaction to BCG in persons negative to tuberculin, when BCG vaccination is contemplated. Further research is necessary to determine whether BCG vaccination is necessary in the presence of infratuberculin allergy.

Pennsylvania Medical Journal, Harrisburg

55:193-288 (March) 1952

Toxemias of Pregnancy. R. G. Douglas, R. Landesman, R. W. Bonsnes and F. MacDonald.—p. 217.
Demonstration and Significance of Pedicle in Roentgen Diagnosis of Polypoid Tumors of Alimentary Tract. B. R. Young and R. L. Scanlan. —p. 225.
Occlusive Arterial Disease of Extremities. S. Lisker.—p. 227.
Plasma Substitutes and Their Uses. R. L. Patterson.—p. 231.
Report on Hearing Survey in Public Schools of Pennsylvania. J. E. Landis.—p. 233.
Use of Cortisone and ACTH in Eye Diseases. H. E. Thorpe.—p. 236.
Service or Servitude—Which Shall It Be? F. F. Borzell.—p. 241.

Plastic and Reconstructive Surgery, Baltimore

9:173-290 (March) 1952

Cross-Leg Flap Procedure. R. B. Stark.—p. 173.
*Cross-Finger Flaps in Treatment of Injuries to Finger Tip. M. N. Tempest.—p. 205.
Mass Treatment of Burns in Atomic Warfare. A. J. McDowell.—p. 223.
Congenital Dermoid Cysts of Nose. J. K. Crawford and J. P. Webster. —p. 235.
Cortisone Therapy in Dupuytren's Contracture. H. Baxter, C. Schiller, L. H. Johnson and others.—p. 261.
Toe to Finger Transplant—Final Result. L. T. Byars.—p. 274.
Internal Wire-Pin Fixation for Fractures of Upper Jaw, Orbit, Zygoma and Severe Facial Crushes. J. B. Brown, M. P. Fryer and F. McDowell. —p. 276.

Cross-Finger Flaps for Injuries to the Finger Tip.—In injuries involving loss of skin over the finger tips, resurfacing the defects with fresh skin is rarely considered, although many are suitable for immediate skin grafting. Often the wound is merely covered with a simple dressing and allowed to heal slowly by granulation, although good skin cover is essential in order to avoid chronic infection and painful finger stumps. Superficial loss of skin over the pulp should generally be treated by free split skin grafts. However, if there is great loss of substance of the pulp, and whenever bone is exposed, full thickness replacement is preferable. Local hand skin should be used wherever possible because even that on the dorsum of the fingers is much stronger than that found in the usual donor sites such as the arm, abdomen, and thigh. Tempest describes his method of repairing finger tip injuries by means of the cross-finger flap. It is suitable for all finger tip injuries in which bone has been exposed, whether it be a clean cut guillotine amputation, or an oblique wound opening up the distal interphalangeal joint. The operation is performed in two stages. A flap is fashioned from skin on the dorsal surface of an adjacent finger. The proposed flap should not encroach on to the volar aspect, because there is danger of injury to the digital neurovascular bundle and of producing a tender scar on the volar aspect of the donor finger. The flap is made approximately one-fourth larger than the defect. The flap may be based proximally, distally, or hinged longitudinally. A small Thiersch graft is cut from the same forearm and sutured onto the raw area on the donor finger. A pressure dressing is applied over this graft. The free margin of the finger flap is then accurately sutured over the tip of the damaged finger using interrupted black silk sutures. An interval of two weeks between operations is adequate, and in several cases the second stage has been quite safely performed after only 10 days. The flap is separated and finally implanted into the tip of the injured finger. Light work can often be resumed three weeks later. The donor area heals rapidly. This report is based on 24 cases in which the cross-finger flap proved useful in repair of injuries of the finger tip. A brief outline is given of its applications in repair of other lesions in the hand.

Proc. Staff Meet. Mayo Clinic, Rochester, Minn.

27:105-120 (March 12) 1952

Unusual Tumor of Parotid Gland: Report of Case. N. J. Bellegie and E. S. Judd Jr.—p. 105.
*Treatment of Acute Painful Phantom Limb. L. C. Kolb, L. M. Frank and E. J. Watson.—p. 110.
Neurofibroma of Trigemiaal Nerve Root in Posterior Fossa: Total Removal by Transtentorial Approach: Report of Case. G. S. Baker and A. A. Bailey.—p. 118.

Treatment of Phantom Limb.—Kolb and associates show, in two case histories, that in certain cases of acute postoperative painful phantom phenomenon, brief psychotherapy may be effectively applied to relieve the painful symptom and associated panic. In both patients the importance of a sound and physically powerful body had been overemphasized through the athletic interests and physical prowess of their fathers. The first case report demonstrates superstitious, terrifying rationalizations to explain the existence of the phantom limb. Such rationalizations are usually concerned with the loss and the fantasied disposal of the amputated part. In the brief psychotherapy the authors considered in order: (1) the patient's concept of the phantom phenomenon and any attendant rationalization he may have regarding its occurrence; (2) his wishes and fears in regard to disposal of the amputated part; and (3) the significance of his

present and past attitudes toward his body in his real and fantasied experiences with persons significant to him, such as parents, family, and associates. Experiences on the part of these authors also suggest that proper preparation of the patient who is to undergo amputation might prevent in some instances the development of the painful phantom hallucination. Such preparation should include a discussion of the occurrence of the phantom phenomenon and inquiry as to the patient's wishes and fear in regard to disposal of the part to be amputated.

Quarterly J. Studies Alcohol, New Haven, Conn.

13:1-188 (March) 1952

Evaluation of Antidotes for Alcohol Reaction Syndrome in Patients Treated with Disulfiram (Tetraethylthiuram Disulfide). D. Lester, E. J. Conway and N. M. Mann.—p. 1.
Electroencephalographic Studies in Alcoholism. S. C. Little and M. McAvoy.—p. 9.
Deaths of Alcoholic Patients Treated with Disulfiram (Tetraethylthiuram Disulfide) in Denmark. E. Jacobsen.—p. 16.
Use of Wine and Other Alcoholic Beverages by Group of Italians and Americans of Italian Extraction. G. Lolli, E. Serianni, F. Banissoni and others.—p. 27.
Rates of Alcoholism in the United States of America, 1940-1948. E. M. Jellinek and M. Keller.—p. 49.
Use of Hospital Facility in Conjunction with Outpatient Clinics in Treatment of Alcoholics. E. P. Walcott and R. Straus.—p. 60.
Study of Use of Alcoholic Beverages Among High-School Students in Utah. A. D. Slater.—p. 78.
Studies of Drinking in Jewish Culture: III. Drinking Patterns of Children and Adolescents Attending Religious Schools. R. H. Landman.—p. 87.
Group Therapy in Alcoholism: Transcriptions of Series of Sessions Recorded in Outpatient Clinic. R. G. McCarthy.—p. 95.

Radiology, Syracuse, N. Y.

58:325-480 (March) 1952

Urologic Problems in Pediatric X-Ray Diagnosis. F. N. Silverman.—p. 325.
Clinical Experience with Irradiation Through a Grid. H. Marks.—p. 338.
Recent Clinical Experience with Grid in X-Ray Treatment of Advanced Cancer: Preliminary Report. W. Harris.—p. 343.
Depth Dose Curves for Grids in X-Ray Therapy. R. Loevinger.—p. 351.
Comparison of Dose Distributions in Patients Treated with X-Ray Beams of Widely Different Energies. H. Garrison, J. Anderson, J. S. Laughlin and R. A. Harvey.—p. 361.
*Radiation Hazards to the Embryo and Fetus. L. B. Russell and W. L. Russell.—p. 369.
Goitre Plongeant (Plunging Goiter) Associated with Pharyngo-Esophageal Diverticulum: Report of Case. M. Slobodkin.—p. 378.
Protective Effect of Small Lead Shields During Repeated Whole-Body X-Ray Irradiation of Rats. J. Gershon-Cohen, M. B. Hermel and J. Q. Griffith Jr.—p. 383.
Effective Thyroid Depth and Compensating Measurements for Iodine Uptake Determination A. F. Reid and J. A. Sorenson.—p. 390.
Air-Contrast Study of Duodenal Bulb: Its Importance in Diagnosis of Duodenal Ulcer. R. R. Meyer.—p. 393.
Gallstone Impacted in Duodenal Cap. J. F. Riesser and B. Vicas.—p. 401.
Rhinolith. R. J. Terrafranca and A. Zellis.—p. 405.
Encapsulated Pleural Effusion Simulating Mediastinal Tumor: Report of Two Cases. C. F. Storey.—p. 408.
Chondrodystrophia Calcificans Congenita: Report of Case. E. M. Savignac.—p. 415.
Device for Immobilizing Children During Radiographic Examinations. E. R. Miller.—p. 421.

Radiation Hazards to Embryo and Fetus.—Results of irradiation experiments on mice corroborated those obtained by other investigators in other mammals, fishes, birds, and invertebrate forms, which demonstrated that the developing embryo is highly susceptible to induction of malformations by irradiation. There is no reason to doubt that this also applies to human embryos. The authors' animal experiments demonstrated that there are well-defined critical periods for almost all the abnormalities obtained, i. e., a particular abnormality such as spina bifida, microphthalmia, coloboma, brain hernia, imperforate anus, hydronephrosis, oligodactyly, polydactyly, and tail and limb deformities may be produced with high incidence by irradiation at a particular stage or stages, but not at all by irradiation at other stages. Critical periods for the majority of gross abnormalities in mice occurred at a time which, in man, corresponds to the second to sixth week of gestation. During at least part of this period, pregnancy may be unsuspected. Irradiation at more advanced stages (corresponding to periods following the sixth week in man) produced less obvious and possibly more delayed effects, which, however, from the human point of view may be as harmful as the gross monstrosities. Doses high enough to produce developmental abnormalities did not necessarily cause abortion or prenatal death. The major malformations are probably due to direct irradiation effect on the embryo rather than indirect action through maternal injury. Doses as low as 25 r produced particular changes if applied at the critical time, and it is quite possible that even lower doses, i. e., well within the range used in diagnostic fluoroscopy, may cause subtle developmental alterations, which in humans would be important. Consequently the authors recommend that, whenever possible, irradiation involving the uterus in women of childbearing age should be restricted to the two weeks following the last menstrual period, to preclude the possibility of fertilization having taken place. This applies particularly to diagnostic irradiation, even if the doses involved are less than 25 r. The present practice of avoiding irradiation during a known pregnancy, that is during later stages, should not be relaxed. Whenever possible in nonpelvic irradiation, the conceptus should be shielded.

Review of Gastroenterology, New York

19:173-260 (March) 1952

SYMPOSIUM ON THE PANCREAS

Pathological Aspects of Pancreatic Disease. H. Popper.—p. 183.
Diseases of Pancreas: Medical Aspects. E. E. Gambill.—p. 194.
Surgical Aspects of Pancreatic Disease. C. B. Ripstein.—p. 203.
Cancer Chemotherapy. C. P. Rhoads.—p. 217.
Differences in Gastric Secretion in Normal Individuals and Patients with Peptic Ulcer: Their Bearing on Ulcer Management. E. Levin, J. B. Kirsner and W. L. Palmer.—p. 226.
Liver Disease and Liver Lymph. J. T. Nix.—p. 241.

Southern Medical Journal, Birmingham, Ala.

45:171-286 (March) 1952

*Megalo-Ureter: New Concept in Treatment. E. L. Lewis and J. C. Kimbrough.—p. 171.
Adolescent Coxa Vara: Clinical Considerations and Aspects of Treatment. I. H. Rapp.—p. 177.
Long Term Evaluation of Aureomycin in Treatment of Amebiasis. L. V. McVay Jr. and D. H. Sprunt.—p. 183.
Obstetrical Practice Under Conditions Imposed by All Out Defensive Warfare. W. A. Ruch.—p. 190.
Renal Hypertension. R. Lich Jr.—p. 194.
Realism in Rehabilitation of the Aged and Chronically Diseased with Regard to Public Health. H. A. Kemp.—p. 197.
External Ocular Signs Associated with Constitutional Disease. E. B. Dunphy.—p. 202.
Treatment of Dacryocystitis in Infants. E. N. Robertson.—p. 208.
Fetal and Neonatal Mortality: Analysis of 266 Deaths. G. T. Schneider, S. V. Ward and T. B. Sellers.—p. 211.
Treatment of Obese Children. W. A. Reilly.—p. 217.
A County Cares for Its Psychotics. S. G. Bedell.—p. 222.
Current Aspects of Peptic Ulcer Therapy. J. F. Crenshaw.—p. 224.
Repair of Anorectal Incontinence Following Operation for Fistula. W. A. Fansler.—p. 229.
The Gallbladder: Comparison of Roentgen and Pathologic Findings. P. E. Russo and C. J. Cavanaugh.—p. 232.
Clinical Evaluation of Neomycin in Different Bases. M. A. Forbes Jr.—p. 235.
Extra-Uterine Gestation Experience at Parkland Hospital, January 1944 to July 1951. C. R. Bates and G. C. Nabors.—p. 240.
A Layman Views the Medical Scene. U. Lee.—p. 246.
Professional Training for General Medical Practice. C. D. Leake.—p. 250.

Megaloureter: New Concept in Treatment.—Neurogenic megaloureter should be differentiated from that due to other causes. Hydroureter is accompanied by obstruction, whereas in neurogenic megaloureter there is no evidence of true obstruction in the drainage system. In neurogenic megaloureter the pelvis and calices are not dilated in proportion to the ureter; peristalsis is present in the dilated ureter; and there is a "normal" undilated segment at the lower end of the ureter with no tortuosity. The etiology of neurogenic megaloureter might be similar to that of megaloesophagus and Hirschsprung's disease (megacolon). This new concept of the etiology and treatment of Hirschsprung's disease led Lewis and Kimbrough to attempt a similar procedure in a case of megaloureter, since other measures such as meatotomy, nephroureterolysis, presacral neurectomy, nephrostomy, and cystostomy had not proved satisfactory. In the new method, the abnormal undilated segment was removed and an ureteroneocystostomy was performed. The hazards of the operation are stricture at the site of reimplantation

and reflux. If these two complications can be prevented a good result should be obtained. A no. 16 polythene catheter was placed in the ureter as a splint and brought out through the bladder with the cystostomy tube. These were left in place about 14 days. There was no reflux, the dilatation disappeared, and the patient became asymptomatic. The authors present the histories of three patients in whom ureteroneocystostomy was done and who were followed long enough for evaluation. The results have been encouraging. Nephroureterectomy may be helpful if the megaloureter is confined to one side, but with the excellent results the authors obtained with their new method, they feel there is no justification for sacrificing good kidney tissue.

Surgery, Gynecology and Obstetrics, Chicago

94:257-384 (March) 1952

Origin and Significance of Macroscopic Intervillous Coagulation Hematomas (Red Infarcts) of Human Placenta. C. T. Javert and C. Reiss.—p. 257.

Cervix Ring Biopsy Technique. J. P. A. Latour.—p. 270.

Early Management of the Severely Burned Patient. E. I. Evans.—p. 273.

Causes of Death Following Biliary Tract Surgery for Nonmalignant Disease. F. Glenn and D. M. Hays.—p. 283.

*Critical Evaluation of Antithrombin Test for Venous Thrombosis. J. McLachlin, R. Paul and J. C. Paterson.—p. 297.

Adenocarcinoma of Large Intestine Associated with Chronic Ulcerative Colitis. Clinical and Pathologic Features of 73 Cases. W. C. Shands, M. B. Dockerty, and J. A. Bargen.—p. 302.

Nutrition of Blood Vessel Grafts; India Ink Injection Study of Their Vascularization. W. S. McCune, J. R. Thistlethwaite, J. M. Keshishian and B. Blades.—p. 311.

Studies on Flash Burns: Thershold Burns. J. H. Morton, H. D. Kingsley and H. E. Pearse.—p. 317.

*Effective Control of Surgical Menopause by Estradiol Pellet Implantation at Time of Surgery. R. W. Delaplaine, J. R. Bottomy, M. Blatt and others.—p. 323.

Persistent Elevation of Serum Amylase in Acute Pancreatitis: Report of Five Cases. G. A. Olander, E. E. Glenn, G. Moy and C. B. Puestow.—p. 334.

Surgical Treatment of Traumatic Esophageal Perforation. W. Weisel and F. Raine.—p. 337.

Pulmonary Surgical Salvage by Bronchial Resection. P. W. Gebauer.—p. 347.

Study of Growth of Aortic-Pulmonary Anastomoses. W. J. Potts and W. L. Riker.—p. 358.

Pneumoarthrography of Knee. T. E. Keats, D. S. Staatz and R. W. Bailey.—p. 361.

Thoracic Cage Closure After Thoracotomy or Thoracoabdominal Exploration. R. H. Overholt and L. J. Kenney.—p. 365.

Antithrombin Test for Venous Thrombosis.—The blood antithrombin is considered of fundamental importance in preventing intravascular clotting. When antithrombin levels are low, as indicated by currently used antithrombin tests, this supposedly reflects a prethrombotic tendency. For the most part the validity of this assumption has been assessed clinically. McLachlin and his associates, however, during the course of venous dissections of the lower extremities in approximately 150 autopsies, were impressed with the high incidence of clinically "silent" thrombi. They feel that a more critical method of assessment is needed to evaluate diagnostic or therapeutic procedures for phlebothrombosis. They carried out serial determinations of the blood antithrombin levels about twice a week until death or recovery in 67 elderly veterans, the aim being to correlate the presence or absence of signs and symptoms of phlebothrombosis with the blood antithrombin levels, but particularly to compare the blood antithrombin levels with the presence or absence of venous thrombi at autopsy. Death resulted in 27, and at autopsy in 19 complete venous dissection of the lower extremities was done. So-called dangerous levels of blood antithrombin were found in 5 of the 67 patients, but in only one of the 27 who died. In 9 of the 19 in whom venous dissection was done at autopsy no evidence of thrombosis was found; in spite of this, borderline antithrombin levels were obtained in three of these cases. These borderline levels might thus be regarded as false positives. There were 10 patients who had definite venous thrombi of the lower extremities, but in only 2 of them was either a borderline or a dangerously low antithrombin level obtained during life. One of these, the only one with a dangerous level, does not stand up to critical analysis, because the dangerous level was obtained on a single occasion, three months before death, although histological examination of the thrombus at autopsy showed it to be of a recent nature. Since this method of assessment shows a complete lack of correlation, determination of the antithrombin level cannot be recommended for the prediction of venous thrombosis.

Control of Surgical Menopause by Estradiol Pellet Implantation.—Implantation of pellets of estradiol into the rectus muscle at the time of total hysterectomy and bilateral oophorectomy was done in a series of 35 patients below the age of 51. A corresponding number of similarly treated women received no pellets and served as controls. The dose implanted ranged from 25 to 75 mg., the majority of the patients receiving 75 mg. The effectiveness of therapy was determined by the clinical response, changes in the menopausal index, and alteration in the vaginal smear. The menopausal index was successfully used as a criterion of the severity of the menopausal syndrome and represents a numerical conversion of the sum of intensity of the 11 commonest menopausal symptoms: vasomotor disturbances, paresthesia, insomnia, nervousness, melancholia, vertigo, weakness (fatigue), arthralgia and myalgia, headaches, palpitation, and formication. It was found that pellet implantation at the time of surgery controlled most of the symptoms and reduced the severity of the menopausal syndrome for up to 15 months after surgery. The effectiveness of estradiol pellet implantation was substantiated by the continued control of menopausal symptoms and the maintenance of a normal or increased degree of cornification of the desquamated cells in the vaginal smear. Most of the control, nonimplanted patients required oral estrogen therapy to control their symptoms adequately. Pellet implantation provided a smooth postoperative course relatively free of the symptoms usually present in the woman in whom the menopause is induced by surgical treatment.

94:385-512 (April) 1952

*Value of Peroperative Manometric and Roentgenographic Examination in Diagnosis of Pathologic Changes and Functional Disturbances of Biliary Tract. P. Mallet-Guy.—p. 385.

*Choledochostomy with Cholangiography: Review of 50 Cases. M. Corff, S. Berger and J. Gershon-Cohen.—p. 394.

*Further Experiences with Local and Systemic Bacitracin in Treatment of Various Surgical and Neurosurgical Infections and Certain Related Medical Infections. F. L. Meleney, B. A. Johnson and P. Tang.—p. 401.

Double Onlay Bone Graft in Treatment of Delayed Union and Nonunion. J. E. Miles, G. A. Degenshein and A. A. Kane.—p. 426.

Physiological Mechanism for Death in Massively Bleeding Peptic Ulcer. H. H. Le Veen, A. G. Mulder and F. Prokop.—p. 433.

*Portacaval Shunting for Portal Hypertension. A. H. Blakemore.—p. 443.

Influence of Anesthesia, Operation, and Obstetrical Delivery upon Patients with Adrenal Cortical Insufficiency. H. Schwartz, W. S. Derrick and E. M. Papper.—p. 455.

Nonoperative Treatment of Perforated Peptic Ulcer. F. W. Taylor and H. L. Egbert.—p. 464.

Gallstone Ileus: Report of Eight Cases. P. Nemir Jr.—p. 469.

Studies in Experimental Frostbite: IX. Rapid Thawing and Prolonged Local Cooling in Treatment of Frostbite Resulting from Exposure to Low Ambient Temperature. H. B. Shumacker Jr. and A. W. Kunkler.—p. 475.

Acute Intestinal Obstruction in Elderly Patients. C. W. Cutler Jr.—p. 481.

Regeneration of Liver in Dog After Partial Hepatectomy: Role of Venous Circulation. J. H. Grindlay and J. L. Bollman.—p. 491.

Studies on Flash Burns: Protective Effects of Certain Fabrics. J. H. Morton, H. D. Kingsley and H. E. Pearse.—p. 497.

Peroperative Manometric and Roentgenographic Examination of Biliary Tract.—Cholangiography during operation was advocated by Mirizzi in 1930, but it was often difficult to interpret such cholangiograms. Since 1942 a technique of peroperative manometric and roentgenographic examination of the biliary tract has been perfected by Mallet-Guy. The technique involves two successive steps: (1) a manometric recording following injection of an isotonic and isothermic sodium chloride solution into the gallbladder or the common duct; (2) cholangiography, with two or three roentgenograms being taken at intervals of three minutes, after injection of a contrast fluid. The method should be used routinely, not merely for a few selected cases. Mallet-Guy used it in about 1,500 operations on humans and in numerous experiments on dogs. During cholecystectomy for gallstones without symptoms related to the common duct, exploration of the pancreas and common duct usually gives negative results. The cystic duct is identified, and half its circumference is cut 4 or 5 mm. in front of the common duct. Then a bent cannula is inserted into the common bile duct. A series of tests with the manometric apparatus may show (1) a tracing that stabilizes at

10 or 12 cm. of water, indicating a normal biliary passage; (2) a tracing below 7 cm. of water suggesting hypotonia of the sphincter of Oddi; or (3) a tracing stabilized at a high level, which indicates an obstruction. Then the cholangiographic examination is performed. The first roentgenogram is taken after an injection of 10 cc. of iodized oil, a second three minutes later, and if necessary a third one after another three minutes. If there has been no leaking or blocking of the transcystic cannula, manometric results correspond with roentgenographic images typical of a normal biliary passage, of hypotonia of the sphincter of Oddi and of the common bile duct, or of an obstruction such as that caused by a stone in the common duct, relative compression by chronic pancreatitis, or hypertonia or fibrous narrowing of the sphincter of Oddi. If such conditions are not recognized at operation, they will produce postoperative recurrences of pain or jaundice. These conditions are quite common, for in 100 patients operated on for gallstones, 38 had diverse pathological conditions. After removal of stones in the common duct, it is possible to show that no other obstruction remains and to decide whether external drainage, primary suture, or a choledochoduodenostomy is required. Manometric and roentgenographic examination for malignant obstructions of the common duct and for biliary functional disturbances by the method of puncture of the gallbladder are described.

Choledochostomy with Cholangiography.—The desirability of doing choledochostomy with cholecystectomy on the slightest suspicion that a stone is in the common duct is widely advocated, but Corff and associates feel that it is not done often enough. In 50 cases in which choledochostomy was done, none of the patients died. Choledochostomy was combined with cholecystectomy in 23 patients. In five choledochostomy alone was done, as the gallbladder had been removed previously. Three patients had cholecystostomy and choledochostomy, this procedure being reserved for the aged and the very sick. Two patients had cholecystojejunostomy and choledochostomy for inoperable carcinoma of the pancreas. The common duct was explored in 23 of the patients because of a history of or the presence of jaundice; in 17 because of dilatation of the common duct; in 6 because the gallbladder was full of small stones; in 2 because stones were felt in the common duct on routine palpation; in 1 to find the cause of the patient's unexplained biliary symptoms; and in 1 when roentgenoscopy done for other than biliary disease showed stones in the common duct. The most prevalent method of exploring the common duct being unreliable, the authors suggest the following measures to reduce the incidence of retained stone: (1) routine exploration of the common duct; (2) more accurate palpation of the common duct by palpation from the left side; (3) more frequent use of the lithophone; (4) the use of cholangiography in the operating room whenever there is the slightest indication; (5) routine use of the completion cholangiogram for check-up after choledochostomy.

Local and Systemic Use of Bacitracin in Surgical and Medical Infections.—The rationale and technique of local application of bacitracin are discussed and illustrated by four case histories. In neurosurgical infections instillation of 5 to 10 cc. of a bacitracin solution containing 500 to 1,000 units per cubic centimeter intrathecally, into the ventricle, or into the cavity left after excision of a brain abscess is well tolerated once or twice a day. This local use is probably more important than the intramuscular injections in such cases, because bacitracin does not readily pass the blood-brain barrier. In the dermatological literature there have been numerous favorable reports on the local use of bacitracin in the pyodermas. For infections of the mucous membrane of the alimentary tract administration of bacitracin by mouth may be considered local treatment inasmuch as bacitracin is not readily absorbed from the digestive tract. Bacitracin in ointment form has proved effective in conjunctival infections. The effect of the systemic administration of bacitracin by means of intramuscular injection with or without supplementary local administration was evaluated on the basis of 160 cases, in 29 of which the treatment was prophylactic. Of the 131 cases with active infection, about three-fourths had failed to respond to other antibiotic treatment, chiefly penicillin, before bacitracin was tried. The over-all results of therapy were favorable in 78% of the cases. In those which had had no previous treatment the results were favorable in 91%. Evidences of kidney toxicity were absent or mild in 68% of the cases, moderate and transient in 30%, and disturbing in only 2%. Bacitracin is an effective drug without serious toxicity, if material is used for systemic administration that meets a specification of a median lethal dose (LD_{50}) of 500 units for a 20 gm. mouse and if the dose is less than 100,000 units a day. Satisfactory control of infection can often be obtained by half that amount. Antibiotics can save a patient from prolonged illness and disability resulting from infections only if the causative organism is promptly identified and its susceptibility to the available antibiotics is ascertained.

Portacaval Shunting for Portal Hypertension.—The syndrome of portal hypertension is characterized by congestive splenomegaly, secondary anemia, leukopenia, thrombocytopenia, and gastrointestinal bleeding or evidence of esophageal varices. Banti's concept that the process originated in the spleen, later to be followed by disease of the liver, was corrected by Whipple, whose studies revealed that congestive splenomegaly with hypersplenism may be caused by a number of obstructive portal lesions. This paper is concerned chiefly with the treatment of portal hypertension by portacaval shunting. The term "portacaval shunt" is used by Blakemore and Whipple to include any type of anastomosis that joins the portal and caval systems of veins. Either the portal or splenic veins are large enough to establish portacaval shunts. By employing the suture technique, there were but 3 failures in 46 cases when the portal vein was used and 6 in 52 cases when the splenic vein was used. In 43 patients with portal hypertension secondary to extrahepatic portal block but normal livers, there were 3 postoperative deaths. In 117 cases of cirrhosis of the liver there were 27 operative deaths. With classification of the 117 cirrhosis patients into two groups on the basis of liver chemistry values and clinical factors, the results were as follows: of 64 good risk patients, 6 died at operation, of 53 poor risk patients, 21 died. The 43 good risk patients with extrahepatic portal block plus the 64 cirrhosis patients classified as good operative risks total 107, or two-thirds of the entire series of 160 cases. There were 9 postoperative deaths (8.4%) in the 107 cases. The chief purposes of portacaval shunting are (1) to protect patients from untimely death due to hemorrhage; and (2) to protect the livers in cirrhosis from the deleterious effects of recurring hemorrhage and wasting ascites, thus affording an opportunity for healing and regeneration of liver parenchyma with medical management. The author urges that patients be evaluated early for shunting, since delay may involve further deterioration of the liver.

Tennessee State Medical Assn. Journal, Nashville

45:47-82 (Feb.) 1952

Improving Infant Salvage with Cesarean Section. S. S. Lambeth.—p. 47.
Post-Partum Examination. P. Williamson.—p. 50.
Integral Implant Following Enucleation. J. Montgomery.—p. 53.
Compound Fractures. H. Smith and F. V. Costello.—p. 57.

45:83-126 (March) 1952

*Surgical Treatment of Mitral Stenosis. W. K. Swann, J. E. Acker, E. C. Sienknecht and R. B. Wood.—p. 83.
Surgical Management of Hirschsprung's Disease. J. L. Herrington Jr. —p. 87.
Carcinoma of Stomach: Survival Nine Years After Partial Gastrectomy. H. H. Shoulders and G. E. Johnson.—p. 91.
Diagnostic Procedures in Precordial Pain. E. W. Patton.—p. 94.

Surgical Treatment of Mitral Stenosis.—Swan and associates performed commissurotomy on 12 patients with stenosis of the mitral valve. None of the patients died, and all benefited from the operation. The patients obtained improvement in exercise tolerance with alleviation of dyspnea. Hemoptyses were eliminated. It is concluded that the patient who is disabled as a result of mitral stenosis should have the benefit of surgical treatment, if there are no contraindications to the operation. The authors did not use surgical treatment in those who had associated lesions such as mitral regurgitation, aortic stenosis and/or regurgitation, or active rheumatic fever. They found that for properly selected cases commissurotomy of the mitral valve is a safe operative procedure.

FOREIGN

Acta Medica Scandinavica, Stockholm

141:385-464 (No. 6) 1952. **Partial Index**

*Herpes Labialis as Complication in Medical Diseases, with Particular Regard to Prognosis of Pneumonia. O. Sylvest.—p. 385.
Kidney Papers: VI. General Rate of Glomerular Filtration. G. Ekehorn. —p. 399.
*Studies in Catheterization of Heart in Cases of Patent Ductus Arteriosus Botalli. O. Storstein, S. Humerfelt, O. Müller and H. Rasmussen. —p. 419.
Incidence of Pernicious Anemia (Number of Patients in the County of Odense, Denmark, in December, 1950). J. Mosbech.—p. 433.
Effect of "Hydergine" (CCK) on Reflex Vasoconstriction and Reflex Blood Pressure Stimulation. A. Kappert, C.-H. Skoglund, A. Bergholtz and G. Nylin.—p. 440.

Herpes Labialis and Prognosis in Pneumonia.—Study of all cases of herpes labialis occurring in 31,940 patients treated in the Medical Department at Sundby Hospital in Copenhagen between 1933 and 1947 shows that it was associated with three groups of diseases: pulmonary disease, various nonpulmonary infections, and digestive disorders. Four hundred and twelve cases of herpes were found in the first group; only 51 in the second; and 9 in the third. Fever apparently activates the appearance of herpes; the author believes that every febrile patient with herpes should have a thorough examination of the lungs, including a chest roentgenogram. Analysis of the statistics relating to pneumonia shows that mortality was lower among patients with herpes than among those without, indicating that the appearance of herpes in pneumonia patients is a good prognostic sign. Closer study showed that this sign is real and does not arise from the fact that some pneumonia patients die before herpes has had time to develop. Efforts to discover the reason for the better prognosis have been unsuccessful.

Catheterization of Heart in Patent Ductus Arteriosus.—Recent advances in surgical treatment of congenital heart disease make accurate diagnosis of cardiac malformations indispensable. Patent ductus arteriosus, coarctation of the aorta, stenosis of the pulmonary artery, and the tetralogy of Fallot can now be treated surgically, but if other malformations exist, they may contraindicate an operation. Twenty-one patients with patent ductus arteriosus, ranging in age from 5 to 71 years, were subjected to catheterization of the heart in addition to routine clinical, radiological, and electrocardiographic examination. The characteristic machinery murmur was not audible in three of these cases; apart from thoracotomy, catheterization of the heart is the only procedure by which the diagnosis can be established. Dilatation of the pulmonary artery, usually with signs of increased vascularization of the lungs, was shown by the radiological examination in every case. The electrocardiogram is usually normal in patients with patent ductus arteriosus, indicating that the strain on both ventricles is equally great. The work of the left ventricle is increased on account of the abnormally high output; that of the right on account of increased pulmonary pressure. A rough calculation of the work performed by the heart per minute shows that a patent ductus causes a 70% increase in the work of the right ventricle and a 130% increase in that of the left ventricle; if there is considerable hypertension in the pulmonary artery, more work will be required from the right ventricle. Evidence of right retardation in the electrocardiogram indicates right heart strain resulting from an increased work load on the right ventricle.

Archivos de Pediatría del Uruguay, Montevideo

13:1-64 (Jan.) 1952. **Partial Index**

Introduction to Study of Growing Children. G. de Toni.—p. 5.
*Cerebral Angiography in Diagnosis of Intracranial Hydatid Cyst: Surgical Treatment. E. C. Palma.—p. 18.
Two Cases of Sickle Cell Anemia. E. Peluffo and J. Nordmann.—p. 37.
*Mumps in Pregnancy and Multiple Deformities in Infant. Case. J. Gabito Farias.—p. 42.

Cerebral Angiography in Diagnosis of Intracranial Hydatid Cyst.—Intracranial hydatid cyst is rare. There are no focal symptoms. Biological tests and eosinophilia are of no diagnostic value. Simple roentgenography of the skull shows local changes in the suspected area. Cerebral angiography is of pathognomonic diagnostic value. The treatment consists of ample craniotomy and protection of deep and superficial tissues by means of a double barrier of cotton, one being moistened with isotonic sodium chloride solution, and the other with 1% formaldehyde solution. The patient is placed in marked Trendelenburg's position, with the head inclined on the involved side. The cyst is punctured, partially evacuated, and then excised, instrumentally with a blunt spatula. The patient of this report was a child of 6 years of age. She complained about headache of long duration and showed a tumefaction on the skull, and roentgen changes at that zone. Angiocardiography was well tolerated. It showed a large extracerebral intracranial hydatid cyst on the left extradural space. The cyst was removed by the aforementioned technique. Two months after the operation pneumoencephalography revealed complete reexpansion of the left hemisphere into its normal place, residual internal hydrocephalus at the posterior zone of the left ventricle, and cicatricial atrophy of the cerebral cortex in the zone previously pressed by the cyst. The patient was in good health several months after the operation.

Mumps in Pregnancy.—In the third month of pregnancy a primipara had the mumps. She had never had roentgen and radium treatments. She and her husband were young, healthy, normal, not related by blood, and had neither syphilis nor alcoholism. There was no history of deformities in the families of either. The child was born at full term; it was of normal size and weight, but had bilateral hare lip and double palatine fissure. The ears had no pinna, ending in a point, like those of a coyote. The child had polydactylism and a valgus foot. He was able to suck from a bottle. He lived for five days and died suddenly, apparently from paralysis of respiration. The author believes women who have a virus disease, especially mumps, early in pregnancy should be informed by the physician of the possibility of deformity of the fetus and the advisability of interrupting pregnancy. The information should be given to her in the presence of the husband so that they may discuss whether the medical advice will be accepted.

Australian and New Zealand J. Surgery, Sydney

21:161-240 (Feb.) 1952

The Anal Canal and Rectum. C. N. Morgan and E. S. R. Hughes. —p. 161.
Five Cases of "Adenochondroma" of Lung. A. V. Jackson.—p. 173.
Pseudo-Glioma, Retinitis and Retro-Lental Fibroplasia. K. O'Day. —p. 179.
Background to Medical Practice and Training of Surgical Apprentices and Pupils in Van Diemens Land. W. E. L. H. Crowther.—p. 185.
Tumours of Pituitary Body and Its Environs: Note on Pathogenesis of Complex Cysts and Tumours. E. S. J. King.—p. 201.
Primary Skin Graft Following Excision of Fistula-in-Ano. E. S. R. Hughes.—p. 212.
Scope of Total Prostatectomy. S. C. Fitzpatrick and A. D. Matheson. —p. 214.
Congenital Malformations of Urogenital Tract and Rectum. J. D. Hicks. —p. 219.
*Pathology of Inter-Digital Pilonidal Sinus. J. T. Hueston.—p. 226.

Interdigital Pilonidal Sinus.—Interdigital pilonidal sinus occurs almost exclusively in barbers. The sinus may exist for years without requiring medical attention, but some barbers have episodes of cellulitis or abscess formation requiring incision. The commonest cleft involved is that between the ring and middle fingers, but sinuses have been observed in all four clefts. Some sinuses have large openings, but smaller sinuses may close. Occasionally multiple sinuses are present in one interdigital cleft. In most long-standing cases it is possible to palpate the deep part of the sinus in the web space as a firm, round mass, the size of a pea. The patient whose case is reported was a barber, aged 49, who for the past five years had noticed a tiny opening between the index and middle fingers of the right hand, and another between the middle and ring fingers for the past three years. At night he often removed hair fragments from these openings. There had been two episodes of cellulitis of the third web space. At operation, an ellipse of skin was excised, including the orifices, and the soft tissue of each web space was dissected out in a block attached to the skin. The skin edges were sutured and healing occurred by first intention. The larger sinus was found to contain a small amount of pus and six tiny black hair fragments. Histologically the interdigital pilonidal sinus is identical with the

pilonidal sinus in the postanal region. The main feature is a track lined by stratified squamous epithelium leading to a collection of hair fragments. The depths of the sinus may be lined by epithelium, but more commonly by granulation tissue. A piece of adhesive over the web space during working hours may result in permanent closure of a sinus, but the sinus and deep abscess should be excised during the quiescent stage if cellulitis occurs repeatedly.

Beiträge zur klinischen Chirurgie, Munich

184:1-128 (No. 1) 1952. **Partial Index**

Fundamentals of Roentgenologic Diagnosis of Small Gastric Cancer. W. Abel.—p. 1.
Primary Carcinoma of Ureter. S. Petković.—p. 27.
Malignant Fibroepithelioma of Penis. G. Rotthauwe.—p. 41.
Clinical Aspects and Treatment of Sclerodermia. H. Zettel.—p. 46.
*Vascular Histology of Stomach and Duodenum in Presence of Gastroduodenal Ulcers. W. Herzog.—p. 74.
Dangers and Shortcomings in Use of Chemotherapeutic Agents and Antibiotics. K. Hinrichs and F. Truss.—p. 111.

Histological Studies on Vessels in Gastric and Duodenal Ulcers.—Herzog was interested in the concept that gastrointestinal ulcers might be caused by vascular disturbances. Specimens obtained at resection were fixed immediately in a 10% solution of formaldehyde. After they were embedded in paraffin, alternate serial sections were stained with hematoxylin-eosin or as for elastic tissue. Summarizing his histological studies on over 3,000 specimens from 112 cases of gastric and duodenal ulcers, the author directs special attention to the occurrence in the ulcer region of arteriovenous anastomoses and of contracted or cushioned veins. These latter have sphincter-like arranged longitudinal muscular bundles, which are connected by elastic fibers and protrude into the lumen like cushions or bolsters. These cushioned veins often concur with the so-called cushioned arteries. Contracted veins and cushioned arteries presumably have blocking functions. The author also mentions so-called funnel veins. He concludes that these vascular peculiarities in the presence of peptic ulcers imply that circulatory conditions play a part in ulcer genesis and deserve further investigation.

Canadian Medical Association Journal, Montreal

66:211-308 (March) 1952

Surgical Treatment of Hypertension: 17 Years in Retrospect. A. C. Abbott.—p. 211.
Abdominal Aortography in Urology. N. E. Berry, E. P. White and J. O. Metcalfe.—p. 215.
Arteriosclerotic Patient as Surgical Risk. G. A. Copping.—p. 217.
Psychological Aspects of Physical Illness. E. Wittkower.—p. 220.
*Cortisone and ACTH in Treatment of Rheumatic Fever. A. L. Johnson, M. F. McCall, E. R. Harpur and others.—p. 225.
Twenty-Six Cases of Asymptomatic Duodenal Ulcer. P. A. Rechnitzer and J. H. Geddes.—p. 231.
Retinal Vessels of Fundus Oculi in Hypertension. K. B. Johnston.—p. 233.
Earache. E. J. Smith.—p. 234.
Practical Aspects of Fluid and Electrolyte Balance. J. R. McCorriston and G. G. Miller.—p. 237.
Dermatopathic Lipomelanotic Reticular Cell Hyperplasia of Lymph Nodes. C. Auger, J. Gandbois and E. Gaumond.—p. 245.
Acute Traumatic Chest. C. S. Dafoe.—p. 249.
Sarcoma of Stomach. J. Turcot.—p. 252.
Pharyngo-Oesophageal Diverticula. E. C. Janes.—p. 255.
Consanguinity and Its Significance in Family History. F. C. Fraser.—p. 258.
Bronchogenic Carcinoma. N. C. Delarue.—p. 261.
Safer Anaesthesia. R. G. B. Gilbert.—p. 267.

Cortisone and Corticotropin in Rheumatic Fever.—The 39 children whose cases are reviewed in this paper were the first of 62 treated for rheumatic fever with cortisone or corticotropin between March, 1950, and September, 1951. The children ranged in age from 3½ to 15 years, and there were 19 girls and 20 boys. The follow-up period was between 3 and 16 months. Twenty-six were given daily one intramuscular injection of cortisone for from 20 to 23 days, the daily dose starting at 200 mg. for two days and continuing thereafter at 100 mg. daily. Seven patients were given the drug orally every eight hours for from 20 to 28 days. The initial daily dose was usually 200 mg. (range 150 to 350 mg.) for one to four days, with subsequent doses of 100 to 150 mg. Six children were treated with corticotropin intramuscularly every six hours; total amounts administered ranged between 480 mg. and 2.54 gm. for periods varying between 7 and 39 days. Five children showed no response. In five others the clinical manifestations reappeared from four to six days after cessation of therapy, and four others had recurrent episodes of rheumatic fever from one to six months after completion of therapy. Nine patients had had one or more prior episodes, and they responded to treatment in the recurrent acute phase as satisfactorily as those treated in the first attack. The ready response of fever, pulse rate, arthritis, and sedimentation rate, and the increase in hemoglobin and fall in globulin and fibrinogen were similar to experience reported by others. All five patients with chorea improved concurrently with therapy, but in only one case was it certain that therapy had influenced the course of the illness. Seven patients were ill with acute carditis. All showed an excellent response to therapy within 48 hours, and two were discharged without clinical evidence of cardiac involvement. A decrease in heart size was observed in four children. Changes occurred in 7 of 17 patients with noticeable cardiac murmurs; apical systolic murmurs disappeared in 3 patients during or shortly after therapy, and diminished in 2 patients. An aortic diastolic murmur diminished in one instance, and an apical mid-diastolic rumble disappeared in another.

Deut. Ztschr. f. Verdauungs-& Stoffwechselkr., Leipzig

12:1-48 (No. 1) 1952. **Partial Index**

*Rectal Absorption of Insulin with Aid of Hyaluronidase. E. Klotzbücher.—p. 7.
Studies on Iron Metabolism: Renal Excretion of Iron in Various Diseases. A. Morczek.—p. 14.
Follow-Up Studies on Patients After Billroth II Operation. W. Crecelius.—p. 21.

Rectal Insulin Absorption with Aid of Hyaluronidase.—The effect of rectally administered insulin was compared with that of subcutaneously administered insulin in persons without diabetes. The dose of insulin in each case was 10 units. It was found that when the rectal administration of insulin was preceded by introduction of hyaluronidase into the rectum, there was a reduction in blood sugar that amounted to 59% of that induced by subcutaneous administration of insulin. Rectal administration of insulin without the preparatory hyaluronidase introduction caused a slight increase in blood sugar content, probably owing to an admixture of a glycogenic substance.

Edinburgh Medical Journal

59:113-160 (March) 1952

Occlusion of Abdominal Aorta. C. C. Burt, J. Learmonth and R. L. Richards.—p. 113.
Tuberculosis: Incident or Disease? C. Cameron.—p. 143.

Journal Obst. & Gynaec. Brit. Empire, Manchester

59:1-152 (Feb.) 1952. **Partial Index**

Effects of Anaesthesia upon Fallopian Tubal Motility. A. H. C. Walker and R. J. Stout.—p. 1.
Nephritis in Pregnancy: Follow-Up Study. H. F. H. Hamilton.—p. 25.
Relative Merits of Basal Narcotics in Treatment of Eclampsia (Including Series of 36 Cases of Eclampsia Treated with Avertin Without Maternal Death). A. U. Campbell and H. Burton.—p. 30.
*Scalp Abscesses in the Newborn: Discussion of Their Causation. D. MacCarthy, A. H. C. Walker and S. Matthews.—p. 37.
Some Aspects of Renal Insufficiency in Obstetric Practice. I. MacGillivray and A. D. T. Govan.—p. 52.
X-Ray Diagnosis of Genital Tuberculosis. S. Rozin.—p. 59.
Hydradenoma of Vulva. A. L. Deacon and C. W. Taylor.—p. 64.
Treatment of Pre-Eclamptic Oedema with Ion Exchange Resins: Preliminary Report. H. M. Carey.—p. 67.
Retro-Pubic Suspension of Urethra and Bladder Neck in Treatment of Female Incontinence. J. A. Chalmers.—p. 77.
Vaginal Metastases from Carcinoma of Ovary. G. M. Evans.—p. 82.

Scalp Abscesses in the Newborn.—During three years in which there were 354 forceps deliveries at the Postgraduate Medical School of London, MacCarthy and associates noted a lesion in the right parietal region in 15 cases; 9 of these were abscesses. Four more scalp lesions were seen after spontaneous delivery in the right parietal region, making in all 19. Two of these were abscesses. In two of the forceps cases the lesions were bilateral,

but the right side was more affected than the left. Three cases of pressure necrosis of other parts of the scalp and one of the arm, and one case of osteomyelitis of the occipital bone, are described. In attempting to explain these lesions the following factors are discussed: (1) injury by the right forceps blade; (2) prolonged pressure on the right parietal bone in labor, predisposing to infection or causing ischemic necrosis; and (3) local pressure and hematogenous infection. Any break of surface of the baby's skin may become infected, however thorough the precautions. After forceps delivery the scalp should be examined for abrasions and, if they are present, local treatment and antibiotics should be given at once. Delay in labor, particularly during the second stage, should be avoided. When forceps are indicated, it should be appreciated that the parietal eminence has possibly already undergone a period of pressure and that, if the head is not fully rotated before application of the blades, traction will further accentuate this pressure, with further risk of injury to the scalp tissues. If the blades do not easily lock, the obstetrician should remove the blades and reexamine the situation, and then try to secure full rotation. Since the forceps are designed to fit the fetal head, faulty application resulting in poor rotation will disturb the dynamics, resulting in a forward projection of the parietal eminence so that it will be subjected to excessive pressure against the pubic bone. The authors deplore the use of Willett's forceps at cesarean section because the head may be delivered by other means. The injury caused by Willett's forceps is sometimes more than trivial. The puncture wound is probably less dangerous than the open tear, but both may result in inflammation or ulceration.

Journal of Physiology, London

116:129-244 (Feb.) 1952. **Partial Index**

Muscle Performance in Rats, Normal and Treated with Growth Hormone. B. Bigland and B. Jehring.—p. 129.
Respiratory Rate and Volume in the Premature Infant. K. W. Cross and T. E. Oppé.—p. 168.
Study of Movements of Auditory Ossicles Under Stroboscopic Illumination. R. Guelke and J. A. Keen.—p. 175.
Effect of Adrenals and Pituitary on Blood Pressure and Cardiac Hypertrophy of Rats. M. Beznák.—p. 219.
Distribution Along Small Intestine of Afferent, Vasoconstrictor and Inhibitory Fibres in Mesenteric Nerve Bundles. C. B. B. Downman. —p. 228.
Effect of Adrenocorticotrophic Hormone (ACTH) and Cortisone on Pregnancy. J. M. Robson and A. A. Sharaf.—p. 236.

Lancet, London

1:575-622 (March 22) 1952

Interpretation of Statistical Trends in Tuberculosis. V. H. Springett. —p. 575.
Poisoning by Barbiturates: Success of Conservative Treatment. S. Locket and J. Angus.—p. 580.
Kemadrin in Postencephalitic Parkinsonism. E. Montuschi, J. Phillips, F. Prescott and A. F. Green.—p. 583.
*Rubber Tubing as Cause of Infusion Thrombophlebitis. R. P. C. Handfield-Jones and H. B. M. Lewis.—p. 585.
Pancreaticogastrostomy. C. Wells, J. A. Shepherd and N. Gibbon.—p. 588.
Pancreaticogastrostomy. A. S. Dill-Russell.—p. 589.
*Value of Modified Starch as Substitute for Talc. J. D. P. Graham and M. E. Jenkins.—p. 590.
Serious Idiosyncrasy to Methoin. P. MacArthur.—p. 592.
Physiological Activity of 3:5:3'-L-Triiodothyronine. J. Gross and R. Pitt-Rivers.—p. 593.
Strangulated Femoral Hernia in a Young Boy. J. L. Temple.—p. 594.

Thrombophlebitis Caused by Rubber Tubing.—A preliminary survey of 80 infusions at the Radcliffe Infirmary revealed that 38 were complicated by thrombophlebitis, which was defined as thrombosis of more than 1 in. (2.5 cm.) of the vein, together with redness and edema of the overlying skin; simple thrombosis without inflammation was not included. The thrombophlebitis began at the site of the infusion and spread proximally along the vein; in some severe cases the vein was affected from the wrist to the shoulder or from the ankle to midthigh. Thrombophlebitis was associated with infusions of blood, isotonic sodium chloride solution, and dextrose solution. The incidence increased with the duration of the infusions. Replies to a circular letter sent to the pathologists of hospitals in different parts of Britain indicated that there was a similar incidence of this complication elsewhere. Among the possible causes considered were (1) bacterial infection; (2) an irritant in the rubber tubing or the other components of the transfusion sets; (3) an irritant in the fluids infused; and (4) a tissue reaction to the trauma inflicted by venepuncture or cannulation. Four different types of rubber tubing were used in an investigation of this complication in infusions of 139 patients, and analysis of the data suggested that thrombophlebitis was chiefly due to the tubing in routine use. The biological effects of rubber need further investigation, and standards should be determined for the constituents of rubber used for therapeutic purposes.

Modified Starch as Substitute for Talc.—Studies were made on three starch glove powders that have been introduced as substitutes for talc. Tests of physical, chemical, and biological properties indicated that, though by no means harmless, they are not inferior to talc in physical properties and are vastly superior in biological properties.

Maandschrift voor Kindergeneeskunde, Leyden

20:1-36 (Feb.) 1952

Half a Century of Pediatrics. E. Gorter.—p. 1.
*Tridione and Nephrosis. W. H. H. Tegelaers and H. Tiddens.—p. 23.

Nephrosis Caused by Trimethadione (Tridione®).—Symptoms of nephrosis developed in a boy, aged 7, one year after treatment with trimethadione (tridione®) had been instituted on account of petit mal attacks. Changes in the blood chemistry and in urea and creatine clearance figures indicated that the glomerular function was damaged. Treatment with a high protein and low sodium diet improved the general condition, but edema formation increased. Human albumin and plasma were given to induce diuresis and counteract the edema, but the albumin content remained low during and for a time after treatment. Complete cure resulted. The patient had no petit mal attacks while under treatment for nephrosis, although electroencephalographic studies revealed the persistence of certain abnormalities. The author cites four cases from the literature in which anticonvulsive treatment with trimethadione produced the nephrosis syndrome, in two of which the patients died.

Medical Journal of Australia, Sydney

1:205-240 (Feb. 16) 1952

The Edward Stirling Lectures—Lecture I: Pre-Natal Paediatrics. L. Dods. —p. 205.
Cortical Neurology: Visual Disturbances and Optic Part of Body Image. I. H. Martin.—p. 211.
Social and Tropical Medicine in University of Queensland. E. S. Meyers. —p. 221.
*Case of Waterhouse-Friderichsen Syndrome with Recovery Following Use of Cortisone, Aqueous Adrenal Cortical Extract and Chemotherapy. H. P. B. Harvey.—p. 222.

1:241-276 (Feb. 23) 1952. **Partial Index**

Some Aspects of Paediatric Endocrinology. L. Dods.—p. 241.
Surgery of Adrenal Glands. E. Wilson.—p. 249.
Acute Diverticulitis of Colon with Peritonitis. E. S. R. Hughes and H. M. Shaw.—p. 259.

1:277-312 (March 1) 1952. **Partial Index**

Radiation Hazards of Atomic Energy. M. Oliphant.—p. 277.
Sciatica and Such Conditions of the Back as Accompany It. J. R. Barbour.—p. 285.
Death Under Anaesthesia: Mr. J. G. Beaney's Case. B. Gandevia. —p. 291.
Acute Epidemic Haemorrhagic Fever. D. D. Beard.—p. 294.

Recovery in Waterhouse-Friderichsen Syndrome.—The occurrence of fulminating meningococcic septicemia is reported in a 7-year-old girl. In contrast to the almost invariably fatal outcome in many cases of Waterhouse-Friderichsen syndrome cited in the literature, recovery in the author's case followed the use of penicillin, sulfadiazine, intravenous fluid administration, and adrenal replacement therapy with adrenal cortex extract ("eschatin") and cortisone. The primary therapy, consisting of 10 cc. of adrenal cortex extract, 200,000 units of penicillin and 2 gm. of soluble sulfadiazine, was completed within 20 minutes, and the response was instantaneous and dramatic. The patient's blood pressure rose, the cyanosed cold extremities rapidly became pink and warm, and the pulse became easily palpable. Meningitis then dominated the picture. Fluids were given by mouth as well as by a very slow intravenous drip, and though some vomiting occurred in the next two days, by the fifth day

the patient was being given a light diet by mouth and the intravenous administration of fluids was suspended. Adrenal cortex extract therapy was suspended after three days. Cortisone acetate, 100 mg. was given intramuscularly at the outset, the dose being repeated at 24 and 48 hours. On the fourth and fifth days 50 mg. of cortisone were given, then it, too, was suspended. The intravenous administration of sulfadiazine was stopped at 72 hours, but it was given orally for an additional three days. The intrathecal administration of penicillin was suspended after the third day, but the intramuscular administration was continued, 500,000 units being given every four hours for three days, then every eight hours for an additional three weeks to prevent secondary infection of the widespread sloughing areas of skin. After eight weeks of hospitalization, the patient had completely recovered. That chemotherapy is essential is demonstrated by the fact that no authenticated recovery has occurred without the use of at least the sulfonamide drugs. However, the adrenal insufficiency plays a major part in the syndrome. In the author's case the immediate dramatic response to therapy could not be attributed to an instantaneous removal of the bacterial toxins from the system by chemotherapeutic agents, but could have been due to the support given to a failing adrenal cortex that had received an "acute insult."

Minerva Pediatrica, Turin

4:33-64 (Jan. 31) 1952. **Partial Index**

*Interrupted Administration of Massive Doses of Penicillin: Clinical Observations and Studies of Antibiotic Levels in Blood. B. Carletti and L. Parenzan.—p. 33.
Development of Isoagglutinins in Newborn Infants and Children: Preliminary Report. L. Bassi.—p. 38.
Congenital Atresia of Esophagus: Clinical and Radiologic Contribution to Its Knowledge. D. Lazzaro-Benincasa and E. Caffaratti.—p. 47.

Interrupted Penicillin Therapy.—A comparative study of the clinical effects of continuous and interrupted penicillin therapy in children was made by the authors from the end of 1949 to May, 1950. Two intramuscular injections of sodium penicillin G in aqueous solution were given to 110 children with bronchopneumonia every 12 hours, with total doses of from 200,000 to 300,000 or 400,000 Oxford units every day according to the age of the patients. During the same period 100 children with bronchopneumonia were given this same quantity of penicillin every day in divided doses every three hours. The effects were the same in the two groups, the only slight difference being that the temperature became normal sooner in children treated with the interrupted method. Because the results were good and the frequent injections, not well tolerated by children, were avoided, the authors adopted this method. Good results have already been obtained in treatment of 200 more children with bronchopneumonia, otitis, pyodermitis, pharyngitis, and tonsillitis. In patients with suppurative otitis media the discharge from the ear began to decrease after two days, and there were no mastoid complications. Administration of a massive dose of penicillin is based on greater bactericidal and bacteriostatic action of the antibiotic, greater accumulation of the drug in the inflamed areas, and the fact that the bacilli are more sensitive to penicillin when they are about to divide. This, according to Bigger, occurs 6 hours after the penicillin in the blood has disappeared, which is about 12 hours after the administration of a massive dose of the drug. The authors demonstrated that one hour after the injection the blood penicillin level was very high, and in some cases a slight amount of the drug was still present after six hours. This condition assures the therapeutic effectiveness of interrupted penicillin therapy in children with penicillin-susceptible infections.

Practitioner, London

168:211-312 (March) 1952. **Partial Index**

Haemorrhagic Diathesis and Haemorrhagic States. L. Whitby.—p. 216.
Non-Addisonian Megaloblastic Anaemias. L. J. Davis and A. Brown.—p. 223.
Drug-Induced Blood Disease. J. N. Chalmers.—p. 235.
Recent Advances in Treatment of Polycythaemia Vera. J. D. Abbatt.—p. 243.
Problems of Haemolytic Anaemias. R. H. Girdwood.—p. 249.
Urinary Obstruction After Prostatectomy. R. O. Ward and J. A. S. Green.—p. 262.

Presse Médicale, Paris

60:233-264 (Feb. 20) 1952. **Partial Index**

*Precocious Macrogenitosomia with Pseudohermaphroditism. G. Guillain and J. Bertrand.—p. 233.
Emergency Radiological Examination in Serious Hemorrhages of Gastroduodenal Origin. E. Delannoy, P. Gautier, A. Soulier and G. Lemaitre.—p. 236.
Syndrome of Neutropenic Splenomegaly. J. Piéri.—p. 239.
Experimental Cerebral Radionecrosis Provoked by Contact Radiotherapy. J. Guillaume, I. Bertrand, P.-L. Gérard and J. Pecker.—p. 242.
Heterogenous Arterial Grafts. J. Sautot, J. Bost and Y. Touraine.—p. 244.

Precocious Macrogenitosomia with Pseudohermaphroditism.—Recent studies support the belief that the adrenal cortex has an androgenous action and that adrenal cortical tumors (usually malignant) produce virilism and the intersexual states designated as masculine pseudohermaphroditism. The authors describe a case in which macrogenitosomia in a 3-year-old child was accompanied by signs of virilism and the presence of ovaries and a uterus. Examination revealed multiple lesions: (1) enlarged adrenals, without malignant tumor but with adenomatous hypertrophy of the cortical zones; (2) adenomatous hyperplasia of the pineal gland; and (3) a large intra-abdominal tumor with an intraspinal prolongation, which proved to be a typical ganglioneuroma. Excessive growth was first noticed when the child was 14 or 15 months old; at the age of 3 years and 2 months he had the stature of a 7 or 8-year-old child. Examination showed precocious virilism and malformation of the external genitalia, melanoderma, and an abdominal tumor. The patient walked on tiptoe, knees half bent, and legs apart. Complete extension of the lower limbs was impossible and appeared painful. The intelligence was that of a child of three or four; the child spoke little, but distinctly, and was well behaved and affectionate. Removal of the tumor, which was apparently adrenal in origin, was decided on in the belief that it was the primary cause of the macrogenitosomia. Exploration of the pelvis at operation disclosed an infantile uterus with two adnexae. There was cystic degeneration of the left ovary. The left adnexae were removed. The lumbar retroperitoneal tumor was about the size of two fists, well encapsulated and only slightly vascularized. The main mass was removed, but a prolongation adherent to the spine could not be freed. The child lived only a few days after operation. The multiplicity of the lesions and the teratoid character of the ganglioneuroma indicate that they were embryonic malformations. No direct causal relationship seemed to exist between the ganglioneuroma, the hyperplasia of the adrenal cortex, and the hyperplasia of the pineal gland; these multiple neuroectodermal malformations were probably all caused by a single injurious agent of unknown origin.

Proceedings of Royal Society of Medicine, London

45:51-100 (Feb.) 1952. **Partial Index**

Present Position of Anaesthesia for Thoracic Surgery. E. J. Miller.—p. 51.
*Ankylosing Spondylitis. H. F. Turney.—p. 57.
Brucellosis in Animals and Man. A. W. Stableforth.—p. 79.
Observations on Primitive Medicine, with Special Reference to Native African Medicine. D. Guthrie.—p. 91.

Ankylosing Spondylitis.—Turney regards ankylosing spondylitis as the preferred term for the condition designated by such terms as rhizomelic spondylitis, ankylopoietic, or adolescent spondylitis. Roentgenologically demonstrable changes in the sacroiliac joints are of primary importance in the diagnosis. Most patients with this disease are young men, and in at least 90% the onset is between the ages of 20 and 40. Early symptoms may be so mild that medical advice is not sought or the diagnosis not made. The first symptom is usually an intermittent aching in the lumbar region, hips, and thighs. If no treatment is given, the pains persist and movement of the spine becomes increasingly restricted, rigidity starting in the lumbar region and spreading upwards. Iritis occurs in about 20% of cases. The cause of the disease is not known. Some American authors regard the disease as a form of rheumatoid arthritis, because in some patients arthritis develops in the peripheral joints, notably the hands, that is indistinguishable from rheumatoid arthritis. In Britain, however, the two diseases are regarded as separate entities. The chief

features in spondylitis are calcification of ligaments and bony ankylosis; although around affected joints there is some rarefaction of the bones, there is no general osteoporosis. The reverse is true of rheumatoid arthritis, that is, there is osteoporosis, and calcification is absent. The effects of x-ray and gold therapy are diametrically opposed; x-ray therapy is helpful in spondylitis, and gold therapy in rheumatoid arthritis. The earlier deep x-ray therapy is started the greater the likelihood that the disease will be arrested.

Rev. Asociación Médica Argentina, Buenos Aires

65:695-734 (Dec. 15-30) 1951. **Partial Index**

Intrathoracic Benign Tumors. J. A. Taiana and E. Schieppati.—p. 697.
Hormonal Iodide in Blood Serum in Thyroid Diseases Under Treatment with ACTH. W. T. Salter.—p. 699.
Cystectomy in Treatment of Hepatic Hydatidosis. J. R. Michans, I. R. Calcagno and N. E. Barrantes.—p. 709.
Moral Problems of Prefrontal Lobotomy. E. Krapf.—p. 712.
*Terramycin in Gonorrhea. M. I. Marchese.—p. 717.

Terramycin in Gonorrhea.—Four patients with acute or chronic gonorrhea and a patient with anthrax and recurrent furunculosis failed to respond to penicillin and sulfathiazole. Terramycin was administered in doses of 250 mg. every four hours up to a total of 4 gm. Rapid cure with permanent results was obtained in all cases. This article is a preliminary report.

Schweizerische medizinische Wochenschrift, Basal

82:273-296 (March 15) 1952. **Partial Index**

Is Perforation of Tuberculous Lymph Nodes of Hilus of Practical Significance in Adults? F. Suter and H. Iselin.—p. 273.
*Failure of BCG Vaccination. J. von Deschwanden.—p. 283.
Heparin Tolerance Test, a Method of Evaluation of Blood Coagulability. B. Sigg.—p. 284.

Failure of BCG Vaccination.—At a high altitude rest home in Switzerland tuberculin tests were performed on 46 German children who were vaccinated with BCG six months to two years before they were sent to this home. Of the 46 children, 26 were tuberculin-positive and 20 were tuberculin-negative. Of the 26 tuberculin-positive children, 13 showed a weak or extremely weak reaction to the test. A relatively large number of the tuberculin-positive children had large hili or definite symptoms of hilitis. These untoward effects of BCG vaccination subsided while the children were at the rest home. After they had been at the home four months, 10 of the 13 children with a weak positive reaction initially showed a definite and significantly increased positive reaction. Four of the 20 tuberculin-negative children had become tuberculin-positive. Undernutrition, protein and vitamin deficiency, unfavorable hygienic conditions, and the decrease of serum proteins as carriers of antibodies and immune bodies were considered responsible for the failure of the BCG vaccination. The author's observations are not unfavorable to BCG vaccination, but emphasize the importance of taking poor diet and unhygienic conditions into account with respect to BCG vaccination.

Semaine des Hôpitaux de Paris

28:877-914 (March 18) 1952

*Surgical Conclusions Drawn from Study of 54 Anatomic Specimens of Tetralogy of Fallot. E. Donzelot, F. D'Allaines, C. Dubost and others.—p. 877.

Surgical Treatment of Tetralogy of Fallot.—Anatomic specimens of 54 patients between the ages of 16 months and 23 years with the tetralogy of Fallot who died after surgical intervention or before surgical intervention could be performed were studied by the authors. Of the 54 patients, 10 had pulmonary atresia, 4 had pure valvular stenosis, 24 had pure infundibular stenosis, and 16 had infundibular and valvular stenosis. Seven patients had pronounced dextroposition and nine had very mild dextroposition of the aorta. In cases of the latter type in which about four-fifths of the aorta originates from the left ventricle, the hypertrophy of the right ventricle is of "barrage" rather than of functional type; infundibulectomy rather than anastomosis of Blalock-Taussig's type should be performed in these cases, which resemble those of Fallot's triad. The authors' statistics suggest that in the large majority of cases intervention is required for infundibular lesions. Infundibular stenosis is always muscular, and the fibrous component is negligible. The anterior wall of the stenosed infundibulum may be extremely thin. Since there is considerable variation in the anatomic structure with infundibular stenosis, it might not be possible to determine precisely its type before or even in the course of surgical intervention. Cases were rare in which a cautious intracardial operation might have increased the flow from the right ventricle. In the authors' experience the impairment caused by direct intervention is more extensive than Brock considers it to be; anatomically the operation is blind and associated with considerable risk. That is the reason why at present, with the exception of cases of Fallot's triad type, the authors prefer the benign and effective Blalock-Taussig anastomosis. A direct attack on the infundibulum may be reconsidered when improvement of technique of intervention on the open heart permits its performance under direct vision of the infundibular region.

Thorax, London

7:1-124 (March) 1952

*Pulmonary Eosinophilia. J. W. Crofton, J. L. Livingstone, N. C. Oswald and A. T. M. Roberts.—p. 1.
Acute Tracheo-Bronchitis. V. E. Negus.—p. 36.
Bronchodilator Action of Khellin. M. C. S. Kennedy and J. P. P. Stock.—p. 43.
Ventilatory Function in Bronchial Asthma. W. A. Briscoe and G. A. McLemore Jr.—p. 66.
New Method for Preparation of Bronchopulmonary Casts. D. H. Tompsett.—p. 78.
Observations on Anatomy of Intrasegmental Bronchial Tree. J. Hayward and L. M. Reid.—p. 89.
Cartilage of Intrapulmonary Bronchi in Normal Lungs, in Bronchiectasis, and in Massive Collapse. J. Hayward and L. M. Reid.—p. 98.
New Index of Intrapulmonary Mixture of Inspired Air. M. R. Becklake.—p. 111.

Pulmonary Eosinophilia.—Pulmonary eosinophilia is defined as a condition in which pulmonary infiltration is accompanied by blood eosinophilia, but in which pneumonia, hydatid disease of the lung, Hodgkin's disease, and sarcoidosis can be excluded. The analysis presented here is based on observations on 16 patients and a review of 450 cases reported in the literature. The definition covers a wide range of diseases, varying from the mild and transient changes in Löffler's syndrome to the severe and often fatal manifestations of polyarteritis nodosa with lung involvement. Crofton and associates divide the diseases into subgroups and discuss the characteristics of the different groups, showing that they have certain factors in common besides eosinophilia and pulmonary infiltrations. Pathological findings suggest that they are different grades of the same fundamental process. The diversity of the causative agents, the eosinophilia, and frequently the family or personal history of allergic illness strongly suggest that pulmonary eosinophilia is a manifestation of hypersensitivity, and the occurrence of asthma and urticaria in a number of cases also supports this view. Although in some conditions there is no personal or family history to suggest a tendency to hypersensitive reactions, certain allergens may be so powerful that they are able to induce hypersensitive reactions even in those with no intrinsic tendency to react in this way. All the aforementioned conditions are probably "diseases of adaptation"; adrenocorticotropin has been used successfully in asthma and "Löffler's syndrome." It is suggested that pulmonary eosinophilia represents a reaction of the body to various stimuli, and that this reaction is one of hypersensitivity. When the hypersensitive reaction is brief and involves only the alveoli, the manifestation is a "simple pulmonary eosinophilia" as described by Löffler; when the reaction is more prolonged it may be called "prolonged pulmonary eosinophilia." When the bronchi are also involved the condition becomes "pulmonary eosinophilia with asthma" or, possibly when the precipitating factor is a bronchial infestation with mites, "tropical eosinophilia." If, in addition, there are gross lesions of the blood vessels, there will probably be lesions of other organs and the condition may progress to polyarteritis nodosa. The 16 patients described here were all under the care of one of the authors, and their cases are representative of pulmonary eosinophilia as seen in London.

Tubercle, London

33:65-96 (March) 1952

Experience with 70 mm. Mirror-Camera Mass X-Ray Unit. J. Deeny, N. F. Walsh, M. M. Conran and B. A. Walsh.—p. 66.
Recording in Mass Radiography. J. Deeny, N. F. Walsh, M. M. Conran and B. A. Walsh.—p. 70.
Perpetuation of Tuberculous Infection in England and Wales: Speculative Synthesis. B. Benjamin and F. A. Nash.—p. 73.
Public Opinion Concerning Tuberculosis. S. T. David.—p. 78.

Ugeskrift for Laeger, Copenhagen

114:259-290 (Feb. 28) 1952. **Partial Index**

Treatment of Meningitis due to Pfeiffer's Bacillus with Streptomycin, Penicillin and "Sulfacombin." J. Andersen.—p. 259.
*Clinical Picture in Primary Hyperparathyroidism Illustrated by Four Cases. K. Schmith and V. Faber.—p. 267.
Iodine and Methylcellulose Treatment in Keratoconjunctivitis Sicca. P. M. Møller.—p. 278.

Clinical Picture of Primary Hyperparathyroidism.—In primary hyperparathyroidism, which is almost always due to adenoma formation, there is a tendency to spontaneous recovery, but permanent organic injury, especially of the kidneys, often remains. The disease perhaps occurs oftener than is indicated by the number of cases in which diagnosis is made. Because of the polymorphic clinical picture and the absence of characteristic symptoms the disease is easily misinterpreted. In cases recognized late the renal disorder progresses and leads to hypertension and nephrosclerosis. The course is generally chronic, but acute cases are seen. Schmith and Faber describe four cases fully. The first two represented renal hyperparathyroidism without changes in the bones or demonstrable calcium precipitation in the urinary tract but with symptoms of renal insufficiency, no hypertension, and only weak, inconstant albuminuria. In both cases a parathyroid adenoma was removed, and the prognosis was considered good. In the third case of acute fatal hyperparathyroidism without roengenologically demonstrable changes in bones or kidneys, and with greatly reduced renal function, necropsy revealed an adenoma and the multiple venous thromboses characteristic of acute parathyroid intoxication, but no calcium deposits in the internal organs. The fourth case was that of a classic generalized osteitis fibrosa with gastrointestinal symptoms, marked renal insufficiency, and gradual decalcification of the bones. On renal biopsy calcium deposits not visible roentgenologically were found in both the cortex and medulla. After removal of an adenoma of the size of a walnut, hypocalcemia developed. The prognosis was unfavorable.

Union Médicale du Canada, Montreal

81:245-376 (March) 1952. **Partial Index**

*Use of Ether in Treatment of Residual Calculi of Common Bile Duct. J. M. Bourque.—p. 248.
Vertebral Column in Rheumatology. J. Jobin.—p. 256.
Requirement of Ascorbic Acid for Acclimatization of Rhesus Monkeys to Low Temperatures. L. P. Dugal and G. Fortier.—p. 262.

Ether Treatment of Calculi of Common Bile Duct.—Pribram's method of treatment for residual calculi following surgical intervention in the common bile duct was used by the author in three patients. It consists of instillation of ether and liquid paraffin through a "T" tube indwelling in the common bile duct. Within 10 to 13 days after cholecystectomy or cholecystotomy and choledochotomy for removal of calculi from the gallbladder and the common bile duct, cholangiography with iodized oil as contrast medium was carried out because of pain, abdominal distention, and frequent belching. It revealed complete obstruction at the level of Vater's ampulla, dilatation of the common bile duct, and reflux of the iodized oil. Irrigation of the common bile duct with 2 cc. of ether followed by 5 cc. of paraffin oil through the "T" tube was performed twice a day. Two of the patients were also given glyceryl trinitrate or atropine sulfate orally in order to relieve the spasm of the sphincter of Oddi. In the first patient treatment was continued for 10 days. The "T" tube then was closed, and repeated cholangiography revealed permeability of Vater's ampulla, absence of calculi in the still-dilated common bile duct, and free passage of the iodized oil into the duodenum. The "T" tube then was removed. In the second patient treatment was continued for four days, and repeated cholangiography revealed the same satisfactory results as in the first patient. Following choledochotomy and removal of two large calculi, the third patient first was treated with glyceryl trinitrate and atropine sulfate for 10 days without effect. The common bile duct was irrigated with ether two or three times a day for four days. The patient had severe pain and refused continuation of the treatment. Four days later intervention was repeated by transduodenal route, and fragments of calculi were observed at the level of the sphincter of Oddi. A new "T" tube was inserted for two weeks. The postoperative course was stormy, but the patient recovered. The failure of the ether treatment in this patient was due to the lack of perseverance of the author rather than to the deficiency of the method. The effectiveness of the ether is due to its property of dissolving the cholesterol of the calculi. This effect is aided by the emollient action of the paraffin oil, which softens, fragmentizes, and decomposes the calculi. Bile salts administered orally or by injections, by increasing the volume and the flux of the bile, and magnesium sulfate by its cholagogue action, may aid drainage of the biliary passages.

Wiener medizinische Wochenschrift, Vienna

102:159-180 (March 1) 1952. **Partial Index**

*History, Diagnosis, Treatment and Evaluation of Changes of Intervertebral Disk and of Cerebral Concussion. L. Böhler.—p. 162.
*Problem of Forty-Eight Hour Limit in Acute Appendicitis. P. Fuchsig and H. Triska.—p. 165.
Indicated and Controlled Treatment of Mammary Carcinoma with Hormones. E. Schmidt-Ueberreiter.—p. 167.

Evaluation of Herniated Intervertebral Disk and Cerebral Concussion.—Böhler in his capacity as chief surgeon of the Vienna accident insurance hospital where admittance is limited to patients with industrial injuries or occupational diseases has been called upon to give his opinion as an expert in cases of true or erroneously suspected prolapse of intervertebral disk, in cases with an erroneous diagnosis of spastic paresis after cranial trauma, and in cases of psychic disturbances after cerebral concussion. On the basis of his large experience he states that the sudden occurrence of back pain (lumbago) should not invariably be regarded as evidence of prolapse of an intervertebral disk, and radical procedures such as myelography or surgical intervention should be recommended only if the pain is intense, of long duration, and does not respond to conservative treatment. Application of a plaster-of-paris jacket for six months may prevent a true prolapsed intervertebral disk from getting worse but may not induce a cure, while in a patient with erroneously suspected prolapse of intervertebral disk this procedure may be harmful from the psychic and from the financial point of view. Lumbago should first be treated by application of heat and rest. Myelography should be performed only in the presence of definite neurological signs of herniated intervertebral disk, and surgical intervention should be practiced only if myelography has proved to be positive. Neurotic persons should not be subjected to surgical treatment. The author believes that spastic paresis is a disease of the central nervous system and never a sequela of a relatively mild cranial trauma without concussion. One should avoid the error of attributing nervous diseases to accidents. Permanent psychic disturbances occur rarely following cerebral concussion except in persons who are insured against accident. Insignificant accidents may induce severe neuroses. Neuroses after accidents may never be cured if the patient is entitled to compensation. Neuroses after accidents are nearly always iatrogenic.

Forty-Eight Hour Limit in Acute Appendicitis.—In 1902 Ochsner postulated that in cases of acute appendicitis of longer than 48 hours' duration, surgical intervention should be performed only if symptoms of progressive peritonitis make such intervention indispensable. Lately there has been a tendency towards relaxing this strict rule to spare the patient the long stay in bed required by conservative treatment. Of 325 patients with acute appendicitis admitted to the first surgical university clinic in Vienna, 203 were operated on before 48 hours had passed and 122 were operated on after 48 hours. Three of the 203 patients died, a mortality rate of 1.5%, and the average length

of hospitalization was 15 days. Six of the 122 patients died, a mortality rate of 4.9%, and the average time of hospitalization was 18 days. These statistical data alone demonstrate the importance of early surgical intervention, which however may be possible in only two-thirds of the patients, even in large cities. Of the 122 patients operated on after 48 hours, 10 did not have diffuse peritonitis or a clinically progressive course, but perityphlic infiltration and occasionally a small encysted abscess were observed. This infiltration was manifested clinically in only five patients. In the other five the appendicitis seemed to fade away, and apparently was of the type in which according to Kunz immediate surgical intervention may be performed after 48 hours. Of the 10 patients with this type of appendicitis, however, the only one who died belonged to this latter group. On operation a small abscess was observed, and death resulted although the abscess was drained and antibiotic therapy had been instituted on the first day of treatment. On the contrary, not one of 31 additional patients with acute appendicitis associated with infiltration and encysted abscess diagnosed on admission and treated conservatively died; the infiltration was absorbed slowly or there was spontaneous perforation into the intestine. The authors, therefore, recommend that immediate surgical intervention should not be performed after 48 hours if the appendicitis is not progressive and if infiltration cannot be palpated. Symptoms will subside in a large majority of these patients, and some days later operation may be performed without any risk. In only about 10% of these patients infiltration may develop within a short observation period, and in these conservative treatment should then be continued and supported by antibiotic therapy. This procedure seems advisable as long as it has not been proved that sulfonamide and antibiotic therapy may render surgical intervention on recent infiltration free from risk.

Zentralblatt für Chirurgie, Leipzig

77:81-128 (No. 3) 1952. **Partial Index**

Congenital Stomach Cysts. A. K. Schmauss.—p. 92.
*Chronic Pancreatitis and Its Surgical Treatment by Splanchnic Resection on Left Side. O. H. Kment.—p. 100.
*Cold Injuries—Rewarming Injuries. H. Killian.—p. 105.
History of Intra-Arterial Blood Transfusion. G. Jorns.—p. 112.
Tetanus Prophylaxis. H. von Jaschke.—p. 117.

Splanchnic Resection in Chronic Pancreatitis.—The surgical treatment of chronic pancreatitis, which in 90% of the cases is secondary to a disorder in the biliary system, was not satisfactorily solved by Payr-Martina's splitting of the capsule nor by Mallet-Guy's partial pancreatectomy. Subsequently Whipple and Brunschwig employed more extensive procedures, but Kment is concerned primarily with the less mutilating resection of the greater splanchnic nerve on the left side. Leriche was the first to try procaine (novocaine®) hydrochloride blockage of the greater splanchnic nerve, which produced favorable effects on the pains caused by chronic pancreatitis. Mallet-Guy further developed Leriche's method. Anatomic studies by Sousa-Pereira had proved that the greater splanchnic nerve on the right side innervates the extrahepatic bile passages and the liver, while the greater splanchnic on the left side innervates the pancreas. Mallet-Guy and his associates were able to corroborate this. Kment agrees with Mallet-Guy that interruption of the greater splanchnic on the left side not only excludes the pain conducting viscera afferent tracts, but he believes that this splanchnic nerve also carries vasomotor and secretory fibers. Since local vasomotor disturbance plays a part in chronic pancreatitis, interruption of the greater splanchnic also influences the pancreatitis. Kment carried out splanchnicectomy on the left side in two women and one man with chronic pancreatitis. All three previously had undergone cholecystectomy and all three had the desired effects from the splanchnicectomy. In a fourth patient who at present is undergoing procaine blockage of the splanchnic nerve, splanchnicectomy will be carried out. The approach is subdiaphragmatic through an ordinary flank incision. The author concludes that his observations on four cases corroborated the experiences of French and American authors.

Cold Injuries and Rewarming Injuries.—Exposure to cold of the entire body and local freezing differ in their pathophysiological aspects. Death resulting from exposure to cold is not due to cell destruction, but is rather due to failure of vital functions at a body temperature that is far above that which causes an arrest of cellular metabolism. Necrosis during local freezing, however, implies severe cellular injury. During exposure to cold great circulatory changes take place to protect the body as a whole, leading to contraction and gradual centralization of the circulation. The author explains the development of various cold injuries of the skin on the basis of a reaction of the vessels, and he concludes that there are no real cold lesions, but that all cold lesions are caused by improper rewarming. Not even freezing of tissues produces cellular damage. The critical oxygen deficiency, which in the last analysis is responsible for the tissue changes including necrosis, does not develop during exposure to cold, but during the rewarming process. He therefore demands that during early treatment the local tissue metabolism of the frozen part be kept fixed by keeping the frozen part at a temperature between 6 and 7 C (42 to 44 F). Warming of the frozen part without relaxation of the arterial spasm and without restoration of the capillary circulation at the demarcation zone, that is, without adequate oxygenation, produces, at temperatures above 6 to 8 C (42 to 46 F), that degenerative metabolism that causes the lesions usually ascribed to cold exposure. However, while the frozen peripheral parts are kept cool, warming must be started from the center of the organism, which the author accomplished by administering a fever-producing preparation of killed nonpathogenic coli bacilli. Vasodilating drugs proved inadequate to release the arterial spasm, and it is felt that interventions on the sympathetic nervous system should be reserved for late cases. Since the development of the artificial fever induced by the aforementioned preparation requires from four to six hours, heating from the center during this interval can be promoted by hot drinks, infusions, and clysters. Moderate amounts of alcohol may also promote capillarization. Administration of oxygen will aid the restoration of the tissue metabolism. The author disagrees with the investigators who demand rapid rewarming of a frozen part, pointing out that those who advocate this gained their experiences on laboratory animals that had been subjected to rapid freezing, a process totally different from that which prevails in the development of cold lesions in human subjects.

77:353-400 (No. 9) 1952. **Partial Index**

*Paralysis of Recurrent Nerve Following Strumectomy: Late Effects Ascertained by Follow-Up Studies. E. Beck.—p. 353.
Indications for Local Use of Sulfonamide in Surgery. H. Bremer and C. H. Löwen.—p. 362.
Metastatic Suppuration in Spinal Peridural Space. H. J. Dammermann. —p. 367.
Simultaneous Occurrence of Two Primary Carcinomas: Three Clinical Cases. H. Bofinger.—p. 369.
Cicatricial Carcinoma. C. Ortloph.—p. 372.
Clinical and Pathological Aspects of Synovioma of Joints. W. Hage. —p. 376.

Follow-Up Studies on Paralysis of Recurrent Nerve Following Thyroidectomy.—In 300 cases in which thyroidectomy was done, 12 patients had unilateral paralysis of the recurrent nerve following the operation. These patients were reexamined two years after the operation. Two patients had neither hoarseness nor dyspnea even with loud speaking or singing; hoarseness had subsided in one seven weeks, in the other two months after the operation. The author admits that the disappearance of hoarseness as such does not prove the restoration of normal function, for it subsides also when the normal vocal cord compensates for the paretic one. However, in both of these patients laryngoscopy disclosed that the vocal cords were in normal position. In seven other patients the normal vocal cord had compensated for the paretic one. In two the final result was unsatisfactory, and the remaining patient could not be reexamined. Hoarseness had subsided during the period from four weeks to six months after the operation. The author believes no further improvement in postoperative paralysis of the recurrent nerve can be expected after six months. This does not apply to the late forms of paralysis, which may appear only after a number of months as the result of cicatrization or neuritis. The author discusses in greater detail the different positions of the paretic vocal cords, including abduction and adduction, and describes newer experiences with vagotomy in cases of paralysis of the vocal cords in the adduction position (posticus paresis).

BOOK REVIEWS

Peptic Ulcer: Clinical Aspects, Diagnosis, Management. Editor: David J. Sandweiss, M.D., F.A.C.P., Associate Attending Physician, Division of Internal Medicine, Harper Hospital, Detroit, Michigan. Cloth. $15. Pp. 790, with 164 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1951.

For the first time, a national association of specialists has sponsored a comprehensive and concise book dealing with peptic ulcer. There are 77 contributors, and, in the foreword, there is a statement to the effect that "they are authorities." Most of the contributors are outstanding workers in the field of gastroenterology, particularly as it relates to peptic ulcer.

The chapters on embryology of the upper alimentary tract, physiology of the upper gastrointestinal tract as it relates to peptic ulcer, and regulation of gastric functions by cortical and subcortical centers are well worth reading. In addition, the illuminating chapter on the mucous barrier in the stomach, by Hollander, is excellently presented. The chapter by Quigley on gastric motility and gastric evacuation, with special reference to peptic ulcer, is also well written. The contribution of Frank Mann on the factors associated with the pathogenesis and etiology of peptic ulcer is good. The chapter on the general adaptation syndrome and peptic ulcer, by Hans Selye, is subject to the same questions raised to the more recent interpretation of the "general adaptation syndrome" that has been proposed by Selye in regard to other bodily functions. Morton Grossman's chapter on a critical analysis of various theories of the pathogenesis of peptic ulcer is written with his usual clarity.

The chapters dealing with diagnosis and differential diagnosis of uncomplicated gastroduodenal ulcer have as their contributors eight outstanding workers in the field of gastroenterology. The medical treatment of uncomplicated gastroduodenal ulcer is, in parts, adequately discussed; however, it is open to the same criticism as all treatment of peptic ulcer; as it is dependent on personal experience. There appears to be a great deal of duplication of effort in the section on medical treatment of uncomplicated gastroduodenal ulcer. The chapter on psychotherapy, by Ripley, is well written, although it seems to suggest a lack of experience with a large group of peptic ulcer patients, as physicians are becoming more conversant with the psychodynamics associated with the peptic ulcer problem; however, had Ripley laid down the criteria for the physician who is not a gastroenterologist, in dealing with patients for whom psychiatric help should be sought, the chapter would have served a more useful purpose.

The section on the surgical treatment of gastroduodenal ulcer gives the pros and cons of surgical approach, whether it be vagotomy, as outlined by Dragstedt, or extensive resection, as recommended by Wangensteen, which is approximately a complete gastrectomy. The section is well documented. The chapter on medical management after operation, by Paulson, is illuminating. The sections on incidental peptic ulcers that occur in the gastrointestinal tract, other than gastroduodenal, are well written, as is the discussion of complications of gastroduodenal ulcer.

Most of the chapters report work that has been previously reported, and little that is new has been added. From the standpoint of a reference book on peptic ulcer, it is probably the best that has been published to date because of the sound clinical observations. Despite extensive discussion, the etiology of peptic ulcer remains an unsolved problem.

The Case Against Psychoanalysis. By Andrew Salter. Cloth. $2.50. Pp. 179. Henry Holt & Company, Inc., 383 Madison Ave., New York 17, 1952.

This highly charged little book attacking Freudian concepts of psychoanalysis contains a series of pungent opinions and criticisms based on some 388 references culled from the psychoanalytic literature. The author's case against psychoanalysis is fortified by knowledge of the failure of Freud and his disciples to present documented evidence incorporating at least several thousand well-controlled laboratory experiments testing the hypotheses advanced by the founding father. In a chapter on the unconscious, the author exposes the weakness of Freud's observational techniques that rely on adult recollections of early childhood sexuality. In this connection, Freud himself admitted that such memories are frequently untrustworthy.

Those who have followed the course of psychoanalysis objectively are aware that too often unsubstantiated claims have been projected by psychoanalysts as facts when proof convincing to the unbiased was not present. "Whenever a psychoanalyst has a fact he can't explain," comments Salter, "he modifies it with a hypothesis he can't prove." The fervor of a religion, worthy though it may be, cannot replace the detachment of a science.

Many of the persons who have undergone psychoanalysis the author calls "the smuggly psychoanalyzed." "They consider themselves members of a select group of sophisticates and act as if those who have not undergone analysis, or who mock its pretensions, have intelligence quotients at least 40 points below theirs." As for the psychoanalyst-patient relationship, Fromm-Reichmann is quoted as saying, "I am giving away no secret when stating that there are therapists who fall asleep while they are supposed to listen, especially if they sit behind their patients and they do not see each other. There are even rationalizations on the part of psychiatrists for such unforgiveable errors in procedure—such as 'I only fall asleep if the patient produces irrelevant material and wake up as soon as the patient's productions become relevant.'"

With regard to Freud's declaration that the patient should find his own solution to his problems while undergoing analysis, Salter states that the psychoanalysts have thereby placed the therapy in the hands of the sickest man in the office, namely the patient. On the other hand, Freud also says, "We serve the patient in various functions as an authority and a substitute for his parents, as a teacher and educator." This, Salter points out, is a definite contradiction in Freudian theory. In one sense the analyst is supposed to be silent and objective, and in another he is urged to use pressure and influence.

A definitive and dispassionate case against some aspects of psychoanalysis remains to be written. Until such a work is written, Salter's controversial primer, despite certain shortcomings, will suffice as an introductory note.

Heredity in Uterine Cancer. By Douglas P. Murphy, M.D., F.A.C.S., Assistant Professor of Obstetrics and Gynecology and Research Associate, Gynecean Hospital, Institute of Gynecologic Research, University of Pennsylvania, Philadelphia. Cloth. $2.50. Pp. 128. Published for Commonwealth Fund by Harvard University Press, Cambridge 38, Mass.; Oxford University Press, Amen House, Warwick Sq., London, E.C.4, 1952.

This investigation was undertaken because the statistical evidence reported in the literature on the subject of the book has, as its chief weakness, the inadequacy of control observations. The present study deals with the occurrence of cancer among the relatives of 201 women who were suffering from cancer of the uterus and of 215 control probands (persons in whose family the occurrence of a characteristic is studied), a total of 6,445 persons. This book is concerned with the frequency of cancer, regardless of its site as well as of uterine cancer. It became evident early in the study that the data would not permit a distinction between cancer of the cervix and the corpus. The first part of the book deals with the literature on the subject, which is shown to be weak in several respects. The rest of the book is concerned with the author's material and methods, the results, and a discussion of the results. The study involved the punching of 46,000 cards, the data on which were checked by punching a second set of cards, making a total of 92,000 cards.

Murphy found that the evidence supports the conclusion that hereditary factors affect the frequency with which cancer appears in the uterus. The proportion of cases of uterine cancer to all cases of cancer was significantly higher in the cancer family groups than in the control family groups. The present

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

study indicates that the factors that predispose to uterine cancer do not predispose in any significant degree to cancer in other sites. Hereditary factors, other than those concerned with uterine cancer, play a role in the etiology of cancer elsewhere in the body. Whether these factors influence the incidence of cancer in specific sites or in all sites (other than in the uterus) is unknown. At the end of the book is a small but select list of references. This study represents a huge amount of diligent work, and it should be of great value to all persons interested in the subject of cancer.

An Introduction to Acarology. By Edward W. Baker, Bureau of Entomology and Plant Quarantine, Agricultural Research Administration, United States Department of Agriculture, and G. W. Wharton, Associate Professor of Zoology, Duke University, Durham, N. C. Cloth. $10. Pp. 465, with 377 illustrations. The Macmillan Company, 60 Fifth Ave., New York 11, 1952.

The growing interest in the Acarina calls for a book such as this, which is written in concise and readable form. Although considerable knowledge is available about ticks, less is known about mites, because "they are not small enough to be handled like protozoans or soft-bodied enough to be treated as worms and they are too small to be studied like insects. Therefore, they have been ignored by zoologists and entomologists alike."

After a chapter on methods of collecting and identifying specimens of this group, the authors discuss the morphology and diagnosis of the members of the various suborders, with notes on their geographic distribution and medical importance, if known. A dozen different forms, most of which are found in the United States, cause trouble in man. They include the Rhinonyssid of birds, a possible vector of ornithosis, and the chicken mite, Dermanyssus avium et gallinae, which causes severe dermatitis in man. The closely related Allodermanyssus sanguineus of rodents is important in the transmission of rickettsialpox. Several different forms cause severe dermatitis, including Pyemotes ventricosus (grain itch), Glycyphagus domesticus (grocer's itch), and, of course, the well-known chigger Trombicula irratans. Among the ticks, the Ornithodoros group is important in the transmission of relapsing fever, tick fever, Rocky Mountain spotted fever, Q fever, and tularemia. The book is recommended to anyone interested in mites or ticks.

Arthritis and the Rheumatic Diseases. By Dr. Philip Lewin, F.A.C.S., F.I.C.S., Professor and Chairman of Department of Bone and Joint Surgery, Northwestern University Medical School, Chicago. Foreword by Morris Fishbein, M.D. Cloth. $3.50. Pp. 175. McGraw-Hill Book Company, Inc., 330 W. 42d St., New York 18; Aldwych House, Aldwych, London, W.C.2, 1951.

In this book, a well-qualified orthopedist explains the problems of arthritis to the layman. He has set himself a difficult task and has not accomplished it satisfactorily in all the chapters, the one on degenerative joint disease being a notable exception. The discussion on rheumatoid arthritis, particularly its etiology, is confusing. Perhaps it would have been simpler if he had said that no one is aware of its etiology. The enthusiasm of the author for the sustained therapeutic effectiveness of the hormonal therapy of rheumatoid arthritis seems premature at this time for lay readers, and the chapters on gout are outmoded by present-day concepts of the disease. Nevertheless, the book is attractively printed with no obvious misprints or typographical errors, and it serves a useful purpose in that it encourages the patient with arthritis. The main criticism stems from the author's apparent desire to simplify a problem that defies simplification. As the author states, he has been "repeatedly obliged to use qualifying phrases as 'sometimes' or 'perhaps.'"

Muir's Text-Book of Pathology. Revised by D. F. Cappell, M.D., F.R.F.P.S.G., Professor of Pathology, University of Glasgow, Glasgow, Scotland. Sixth edition. Cloth. $10. Pp. 1090, with 636 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1951.

This is a new edition of a good textbook on pathology revised by a well-qualified teacher who has maintained the values established by the original author. The primary purpose is to meet the requirements of medical undergraduates. The subject matter is handled on a scope as inclusive as is possible in a single volume of reasonable size. Somewhat more space and detailed effort are allotted to general pathology than is usual in such texts, and this proves advantageous, particularly in the chapters dealing with neoplasms, in which certain specific entities are discussed to further a general understanding often lost in texts that relegate nearly all specific tumors to special pathology.

The general format is good, and the type allows ease of reading. The reproductions of photomicrographs are not satisfactory as a whole, apparently because of too vigorous cropping. All illustrations are in black and white.

Although the material seems accurate, it is sometimes treated in a manner unnecessarily vague and lacks clear-cut strength. This would not be a fault in a text for postgraduates, but, for undergraduate students, firm statements are pedagogically mandatory whenever possible. Occasional usage of terms more common in Britain than in the United States may limit wide recommendation as a textbook in America, but, for collateral study, it should prove valuable. The brief and carefully selected bibliography should prove far more valuable to students than the more exhaustive and generally neglected lists often used in similar textbooks.

Die Heliotherapie: Fünfundvierzigjährige Erfahrungen mit der Sonnenkur insbesondere bei der chirurgischen Tuberkulose. Von Dr. A. Rollier, Honorarprofessor der Universität Lausanne. Übersetzt von Dr. med. Karl Triebold. Cloth. 16 marks. Pp. 176, with 95 illustrations. Urban & Schwarzenberg, Thierschstrasse 11, München 22; Meinekestr. 13, Berlin W. 15, 1951.

The greater portion of the text discusses a program for the treatment of extrapulmonary tuberculosis patients. The therapeutic program outlined includes such subjects as high altitudes, bedrest, the treatment of the "psyche," wherein the arts and crafts are used for their diversional as well as therapeutic value, the use of splints on patients with musculoskeletal involvement, the use of exercises when indicated, the use of "new drugs as adjuncts to heliotherapy," such as sulfonamide, penicillin, streptomycin, and *p*-aminosalicylic acid, and the use of exposure to sunlight.

It is regrettable that the text so exaggerates and overemphasizes the value of heliotherapy in the treatment of disease, particularly tuberculosis. It is indicated in the chapter on the physiological and therapeutic role of the sun that "Air and sun baths develop the musculature of the adult and child harmoniously; prevent 'trophoneurotic' atrophy of muscle and muscular atrophy due to inactivity." Although the text does not attempt to differentiate between the various components of sunlight, such as ultraviolet, infrared, and visible light insofar as the therapeutic effects are concerned, it is doubtful that any of the components of sunlight play a role in preventing muscle atrophy.

On examination of the text, it is found that the actual regimen used for the treatment of the tuberculous patient includes far more than the use of sunlight, high altitudes, and fresh air. Whatever therapeutic success may accrue from the regimen is a result of the entire program, and heliotherapy is probably not the chief factor in its success.

Military Medical Manual. [Foreword by George E. Armstrong, Major General, U. S. Army, The Surgeon General.] Seventh edition. Cloth. $5.75. Pp. 761, with illustrations. Military Service Publishing Company, Harrisburg, Pa., 1952.

This edition of the manual contains an enormous amount of information. The author, or authors, responsible for the collection and presentation of this information remain anonymous; however, the manual is so well documented and the text shows such familiarity with medicomilitary procedures that no one could doubt that the authors speak authoritatively.

Part 1 of the manual covers purely military subjects about which the medical officer will wish to have knowledge. These subjects include tactical functions of the arms, organization of large units, command and staff procedures, and map and aerial photograph reading. For instance, a newly appointed medical officer may never have occasion to fire a gun, but he certainly will want to know, for example, what a .30 caliber machine gun is and how it differs from a 75-mm. rifle. This is general knowledge that all medical officers assigned to units should have.

Part 2 comprises 194 pages of medical subject material including medicomilitary history and the organization and func-

tion of the Army Medical Service. There is an interesting chapter on military preventive medicine and much new material on the medical aspects of atomic, biologic, and chemical warfare. Every reader of this section can obtain a thumbnail sketch of how the complex organization of the service developed and how many things have been added in order to keep in step with the great strides that modern medicine has made. The new special agents that have capabilities of widespread usage in future wars are meant to produce mass casualties. This means the development of special means of mass evacuation and treatment.

Part 3 covers medical tactics in administration and has to do with services in active theaters of operations or in communication zone installations. A considerable amount of space is devoted to medical military administration. This part contains detailed information about the technical employment of medical units in support of combat operations. The chapter on training of personnel and medical units is especially instructive. Here are described many things that a medical officer should know before he starts to operate any training program, no matter how simple.

Throughout the book there are many photographs, sketches, and diagrams. The diagrams are especially valuable in orienting the reader to the text. Any officer or enlisted man connected with the defense forces could utilize this book as a ready reference to almost everything that he comes in contact with that is new to him and different from that with which he is familiar in civilian life. A young medical officer by reading the text will readily learn terms and procedures that he will hear many times during his service with the colors.

This new edition is an improvement on former editions in both scope and content. It is printed on thinner paper, so that the book is not too bulky. In the foreword, the Surgeon General of the Army announces that, although this book is in no sense official, he considers it a determined effort to present in a condensed form the latest and most authentic information that could be drawn from official documents. It should serve its users as a convenient reference as well as a source of inspiration and guidance.

Textbook of Refraction. By Edwin Forbes Tait, M.D., Ph.D., Associate Professor of Ophthalmology, Temple University School of Medicine, Philadelphia. Cloth. $8. Pp. 418, with 93 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1951.

The author of this work has taught refraction to undergraduate and graduate students for several years and has tested in the classroom and in the clinic the methods of refraction and measurements of ocular motility that have been promulgated by advocates of systems of investigation of ocular disorders. The physiological background of neuromuscular abnormalities has received unusual attention, for an understanding of the ocular musculature is paramount in the explanation of disturbances of ocular motility and their relation to comfortable vision. All terms are defined so clearly that the students are saved the confusion so common in treatises based on the mathematical treatment of clinical refraction. It is assumed that the student has a working knowledge of ophthalmic optics. Abundant references are added to each chapter, so that there is no needless repetition of mathematical formulas.

In a somewhat unorthodox arrangement, the 38 chapters cover the field from consideration of illumination, faulty ocular structure, and faulty neuromuscular coordination as causes of visual disturbance through the types of refractive error usually found on clinical examination, reading difficulties, alexia, dyslexia, and amblyopia. Chapters on methods of refraction comprise a good portion of the book. Because of minor variations in methods that are, in principle, similar, the usually employed methods of refraction are fringed on both ends by rule of thumb practices that have been picked up in office practice. The true basis for these methods as well as a definition of their application as viewed by the author is a refreshing novelty in a book on a subject so scientifically exacting as refraction.

The book is well written and should be read by all refractionists who wish to understand the fundamental principles of the practice. It will be particularly helpful to graduates and practitioners as a review of physiology.

Urological Pathology. Volumes I and II. By Peter A. Herbut, M.D., Professor of Pathology, Jefferson Medical College and Director of Clinical Laboratories, Jefferson Medical College Hospital, Philadelphia. Cloth. $24 per set. Pp. 693; 695-1222, with 527 illustrations. Lea & Febiger, 600 S. Washington Sq., Philadelphia 6, 1952.

This work, the author claims in his preface, is intended for a variety of readers, from the undergraduate student to the urologist. It is the attempt to write a book with such general appeal that produces many of the shortcomings of these two volumes. The contents are confined to disorders generally included in the specialty of urology. After a review of the embryology, anatomy, and physiology, the disease processes are treated on a regional basis.

This approach to pathology will certainly help the surgeon in his search for the disease of a lesion in a removed organ. But in the urologic system, disease frequently affects directly or indirectly the entire genitourinary system (e. g., tuberculosis), and it is often more helpful to discuss a pathological process as it occurs in the entire length of the urinary tract. In these volumes, to study the problem of tuberculosis the student would have to use six references, with the inevitable risk of failure to appreciate that the disease is essentially a process that may manifest itself in one or more of several organs. The pathological descriptions are, for the most part, complete, and good bibliographies provide the reader with references for more detailed study. The subject of congenital deformities calls for fuller description, as they are being recognized with increasing frequency in pediatric urology. In the discussion of hypertrophy of the bladder in the child, no mention is made of urethral valves as a mechanical cause for this condition, and it is necessary to turn to another section of the book to find an account of this important cause of urinary obstruction in childhood.

The author reasonably claims that the addition of sections on treatment helps to bring to life a dead subject, but the inclusion of clinical data seems redundant in a book claiming by its title to be a textbook of pathology. Moreover, the sections on diagnosis and treatment are necessarily brief and sometimes inaccurate. It is stated that the passage of air and feces in the urine is pathognomonic of urethral fistula, whereas these symptoms are far more diagnostic of a vesicorectal fistula.

Illustrations are plentiful but not always helpful in demonstrating the essential features of the lesion (e. g., hypospadias and exstrophy of the bladder). Excellent though they may have been in the past, the reproduced engravings from other sources such as "Gray's Anatomy" do not reach the high standards demanded by modern textbook illustration. With the faults mentioned above, it is difficult to recommend this work as a textbook for the student, but it should find a place as a useful book of reference on the urologist's bookshelf.

Das vegetativ-endokrine Syndrom der Frau. Von Prof. Dr. med. Friedrich Curtius, Chefarzt der med. Klinik des Krankenhauses Ost Lübeck, und Dr. med. Karl-Heinz Krüger, Oberarzt der inn. Abt. des allg. Krankenhauses Hagen i. W. Boards. 22 marks. Pp. 120, with 33 illustrations. Urban & Schwarzenberg, Thierschstrasse 11, München 22, 1952.

The authors apply the term vegetative-endocrine syndrome to a triad of symptoms, namely, vasolability plus obstipation plus ovarian insufficiency. The book contains eight chapters, which cover the following subjects: statistical basis for the vegetative-endocrine system in women, pathophysiology, the climacterium, metabolism and the vegetative nervous system, the limitations of the syndrome from other constitutional crises, and etiology, pathogenesis, and treatment. In only 12% of the authors' patients did the symptoms first arise in the climacterium. Many women who have this syndrome are mistakenly treated for cardiac disease or hyperthyroidism.

The treatment of the vegetative-endocrine syndrome is many-sided and includes gymnastics, massage with manipulation of the abdomen to overcome the obstipation, hydrotherapy, hypnosis in some cases, psychotherapy, the use of hormones, and reduction of weight in obese women. The use of coffee, tobacco, and salt must be eliminated. The cause of this syndrome according to the authors is a disturbance in the diencephalus-hypophyseal relationship. At the end of the book, there is an extensive bibliography. It is difficult to evaluate this book if one is not convinced that there is such a specific syndrome as the authors have written about.

Psychiatry in General Practice. By C. A. H. Watts, M.D., D.Obst. R.C.O.G., and B. M. Watts, M.B., B.S. With foreword by J. D. Wyndham Pearce, M.D., F.R.C.P.E., D.P.M., Assistant Physician to Department of Psychiatry, St. Mary's Hospital, London. Cloth. 12s.6d. Pp. 228. J. & A. Churchill, Ltd., 104 Gloucester Pl., Portman Sq., London W.1, 1952.

To quote its foreword, this little book was "written . . . by general practitioners for general practitioners," and, it may be stated forthwith, the volume serves its purpose admirably. A specialist may, of course, cavil at the oversanguine naïveté expressed in statements such as (page 5) "The average time spent on [the cure of] a neurotic is about three hours"; (page 12) "50-5 per cent of suitable psychiatric cases can be expected to recover completely and cease to be (sic) a burden on the general practitioner"; or the table on page 10 that neatly lists the "causes of anxiety" as follows: "frustration, 45 per cent, insecurity 35 per cent, sexual problems 16 per cent, guilt feelings, 4 per cent." Even more misleading is the assertion (page 162) that "Many hysterics have a low I.Q. and their inferior intelligence renders them inadequate when the stress and strain of life becomes too great," or (page 167) the classification of schizophrenia among "the rarer forms of psychiatric illness." And yet such slips from grace do not change the fact that the book is simply and engagingly written and that it packs into a small space a gratifying amount of good sense and useful advice to the general practitioner on how to detect, diagnose, and treat the incipient and reversible disorders of somatic function and general behavior that form so large a proportion of his daily responsibilities. The book is too brief and too sparsely documented to be used as a text or standard reference work, and some of its passages are applicable only to British panel practice. Nevertheless, it reflects such clarity of thought and breadth of experience that it will appeal to students and physicians everywhere.

Cold Injury: Transactions of the First Conference June 4-5, 1951, New York, New York. Edited by M. Irené Ferrer. Sponsored by Josiah Macy, Jr. Foundation. Cloth. $3.25. Pp. 248, with 39 illustrations. The Foundation, 565 Park Ave., New York 21, 1952.

In this book, the explanation and treatment of the changes that occur in the body when all or part of it is exposed to cold are discussed. Each of the five sections consists of a coherent presentation by one investigator followed by a much less coherent general discussion by other participants in the conference. The discussion is painful reading at times, because it shows not only how labored are the gropings of the scientific mind but also how imperfect is the communication between two such minds. Words are badly misused ("differential" for "difference," page 162); metabolism is referred to as "basal" when it is not (pages 228 and 229); unnecessary abbreviations ("Tm," page 150) are used in the text and reappear, still unexplained, in the index (page 247); and reckless statements ("I don't believe all this nonsense about these nervous patients," page 143) abound. While this makes for misunderstandings, it also constitutes a challenge to participants in future conferences.

Of the five divisions, two are concerned with animal experiments and the other three deal with homeokinesis, hypothermia, and acclimatization. For the medical reader, the most important idea in the book is expressed by Siple (page 88): The key to rewarming is sequence, not rate, and the circulation must be ready to enter each successive area as soon as it is thawed. It is hoped that the next of these annual conferences will bring out more connected thinking on this crucial point.

Handbook of Chest Surgery for Nurses. By J. Leigh Collis, M.D., B.Sc., F.R.C.S., Assistant Surgeon, United Birmingham Hospitals, Birmingham, England. In collaboration with L. E. Mabbit, S.R.N. Third edition, revised by J. Leigh Collis. Cloth. $3. Pp. 188, with 131 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; Baillière, Tindall & Cox, 7-8 Henrietta St., Covent Garden, London, W.C.2, 1951.

This small handbook has been designed as a textbook for nurses working in wards in which diseases of the chest are treated or in hospitals devoted to surgery of the chest. The simple and concise presentation of thoracic anatomy and physiology is to be commended. Surgery of the chest is described, and such details as armamentarium, positioning of patient, and water-seal drainage have not been overlooked. Particular emphasis has been placed on radiology and postoperative care. Five years have elapsed since the publication of the second edition of this handbook, and the authors are to be complimented for making those alterations and additions that have become necessary in the intervening period of time. The subject of chemotherapy has not been neglected, and its importance to pulmonary tuberculosis has been stressed. Although a book of this type does not permit lengthy discussions, it would have been well to include a few thoughts concerning esophageal diverticulum. This book can be recommended to nurses who work in chest surgery.

A Sex Guide to Happy Marriage. By Edward F. Griffith. Introduction by Robert Latou Dickinson, M.D. Cloth. $3. Pp. 352, with 19 illustrations. Emerson Books, Inc., 251 W. 19th St., New York 11, 1952.

This book, originally written in 1935, has gone into 25 editions, which have had a wide sale in England and in the Commonwealth countries. This American edition has been specially prepared and brought up-to-date. Robert Latou Dickinson, who was a pioneer in sex education in the United States, has written an introduction. The book provides a liberal education for the lay person concerning the role that sex plays in an enlightened society. The door of sex behavior has been thrown wide open, and ignorance and fears have been completely dispelled. Scientific information properly presented to adults must result in wholesome rewards.

The author describes in detail and by well-chosen illustrations the anatomy and the function of the reproductive organs. He discusses the problems of the single man and woman, their premarital relations, and normal and desirable sex conduct after marriage. He discusses the facts concerning the spacing of children and the methods available for the control of reproduction. Some sex problems of the adolescent boy are discussed. Two of the chapters are devoted to the diagnosis and treatment of sterility. The appendix lists the various marriage counseling services, the family counseling services, and the planned parenthood clinics available in the United States. A bibliography contains the names of the most informative books for lay education in this special field. This carefully written, informative, and interesting book can be recommended to physicians as a text in the increasing number of college courses that prepare young persons for marriage and for intelligent young adults who should be better informed about sex and its implications.

Oral Medicine: Diagnosis and Treatment. By Lester W. Burket, A.B., D.D.S., M.D., Professor of Oral Medicine and Dean, School of Dentistry, University of Pennsylvania, Philadelphia. With chapter on Oral Cancer by S. Gordon Castigliano, B.A., B.S., M.D., Chief, Department of Head and Neck Tumors, American Oncologic Hospital, Philadelphia. Second edition. Cloth. $14. Pp. 575, with 372 illustrations. J. B. Lippincott Company, 227-231 S. Sixth St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W.C.2; 2083 Guy St., Montreal, 1952.

The second edition of this textbook on oral medicine includes a complete rewriting of many chapters and an extensive revision of others. The material dealing with gingivitis, herpes, lichen planus, leukoplakia, and diseases of the tongue has been greatly expanded. A new section on oral cancer is of particular interest to the general practitioner who often has thrust on him the initial responsibility for early recognition of oral cancer regardless of who may subsequently treat the disease. The bibliography has been revised extensively and a number of new illustrations added. For the otolaryngologist, dermatologist, internist, general practitioner, and dentist, in fact, for any physician who examines the mouth, this book is invaluable.

Ear, Nose and Throat Diseases for the General Practitioner. By William McKenzie, M.B., B.Chir., F.R.C.S., Surgeon, Royal National Throat Nose and Ear Hospital, London. Cloth. $2. Pp. 136, with 9 illustrations. [Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2]; E. & S. Livingstone, Ltd., 16 and 17 Teviot Pl., Edinburgh 1, 1952.

This small book is a superficial presentation of the commoner ear, nose, and throat diseases encountered in clinical practice. Notwithstanding an easy, conversational style and some down-to-earth comments on the art of practicing medicine, it is doubtful whether a slight coverage of the many topics discussed is suited to the day-by-day requirements of the contemporary general practitioner in need of more detailed information.

QUERIES AND MINOR NOTES

BEER AND PENTOBARBITAL (NEMBUTAL®) AND A FRACTURED SKULL

To the Editor:—*A man, 33 years old, while working, was struck on the head with a small piece of falling metal, causing a laceration that was closed with two stitches. The attending physician gave him six 1.5 grain (0.10 gm.) capsules of pentobarbital (nembutal®). He was injured at 2:00 p. m. and returned to work. At 4:00 or 4:30 p. m., he took one capsule, and he left at 5:30 to drive a truck about 40 miles from the plant. On the way, he stopped and drank one bottle of beer. Then, as he drove on, the right side of the car swerved and hit the railing of a bridge, breaking in two a 2 by 6 oak beam. His car hurtled into the creek, and the patient died of a fractured skull shortly after entering the hospital. Would the alcohol in the beer combined with the 0.10 gm. of pentobarbital cause him to be so inebriated that he would become reckless of his life?*

George T. Peel, M.D., Anderson, S. C.

Answer.—One 12 oz. (360 cc.) bottle of 3.2 beer contains ½ oz. (15 cc.) of absolute alcohol. If all the alcohol were absorbed and none oxidized or eliminated, the alcohol content of the blood would be about 0.02%. This amount of alcohol would be insufficient to account for the man's accident. The barbiturate alone could have had sufficient sedative effect to have contributed to the accident. It is also a remote possibility that the man had an idiosyncrasy to the barbiturate, so that a brief state of excitement might have preceded the sedative action. It is of course obvious that no person should drive a car when taking therapeutic doses of sedative drugs. The evidence that this man drank one bottle of beer is probably only hearsay, and the amount of alcohol in the body could have been determined only by a chemical test. It is well known that there is usually a discrepancy between the amount of drinking that is admitted and the amount of alcohol that appears in the blood. In cases of death by violence a postmortem examination should include an examination of the blood and/or urine and spinal fluid for alcohol.

VITAMINS AND IMPAIRED HEARING

To the Editor:—*Is there any value in treating otosclerosis with vitamin A injections?* *M.D., Alabama.*

Answer.—Unfortunately, vitamins have not proved of value in the treatment of any type of hearing impairment, including otosclerosis. There have been a few preliminary promising reports in the literature, but subsequent testing on a well controlled series of cases failed to show favorable results.

PERFORATION OF NASAL SEPTUM

To the Editor:—*What can be done to stop the whistling sound caused by a small perforation of the nasal septum? Will enlarging the perforation stop the noise? My patient is a singer and is distressed by this condition, which followed many years after a nasal cosmetic operation, probably including repair of a deviated septum.* *M.D., New York.*

Answer.—A whistling sound caused by a small perforation of the nasal septum can be corrected either by epithelization or by surgical means. In the former instance, the perforation is enlarged, and the raw edges are cauterized with a silver nitrate stick or with a fine cotton applicator dipped into a 50% solution of trichloracetic acid. A septal perforation can also be repaired surgically by downward shifting of a bipedicled flap on the mucous membrane of one side. The success of this procedure depends largely on the size of the perforation and the amount of scarring present.

VISCOSITY OF SEMEN

To the Editor:—*What is the cause of the increased viscosity seen in semen with sperm counts that are below standard for fertilization? Is there an etiological factor in these specimens that prevents liquefaction of the semen? Some of these patients have an associated prostatovesiculitis that could cause a purulent secretion and, therefore, poor liquefaction; but, there are others who show no evidence of local prostatovesicular disease and yet have semen that remains unliquefied for as long as 24 hours. Is there any effective parenteral treatment?* *Murray Russell, M.D., Beverly Hills, Calif.*

Answer.—Increased viscosity of semen occurs oftener in the presence of oligospermia, but azoospermatic specimens may be viscous as well as those with more than 100 million spermatozoa per cubic centimeter. There is no recognized specific etiological factor that prevents liquefaction of the semen. Hotchkiss cites an instance of decreased viscosity after weekly prostatic and seminal vesicle massage; however, specimens may be viscous in the absence of infection. Hotchkiss also states that neither short courses of testosterone propionate nor injections of chorionic gonadotropin were helpful. There is no known chemical that can be given parenterally with resultant benefit. It is generally agreed that hyaluronidase is not present in the absence of spermatozoa, yet such specimens may or may not be viscous. It would seem unlikely that subcutaneous injection of hyaluronidase would be of any help.

DRY ICE IN GOLF BALLS

To the Editor:—*A woman works in a golf ball factory, where she handles rubber immediately after it has been treated with dry ice. Will her health be impaired as a result of handling this frozen rubber?*

W. R. Troutwine, M.D., Crown Point, Ind.

Answer.—In some golf ball factories, rubber strands are wound about a pellet of dry ice, which after evaporation leaves a desired hollow space at the core of the ball. All resulting damage to workers is a consequence of cold, since the quantity of carbon dioxide is usually insufficient to overstimulate respiration or to cause oxygen deficiency by displacement. From direct contact with the ice or cold rubber, severe tissue freezing may readily arise, with ensuing vesication, necrosis, and gangrene. Apart from freezing, chronic persistent erythema and pain (chilblain) may arise. Underlying this condition is a vague peripheral vasoneuropathy. These effects may be readily understood when it is realized that the temperature of dry ice is about −109 F (−78.3 C).

REMOVAL OF ACNE SCARS

To the Editor:—*In* The Journal *April 19, 1952 (page 1458) is a query on the use of carbon dioxide slush in the treatment of postacne scars. The answer correctly states that the above treatment is of little value but fails to inform the questioner that there are available at present two methods that improve postacne scars considerably. They are both abrasive methods, the purpose of which is to level down the skin to the base of the scars. This is achieved by either sandpapering or, preferably, using the method recently introduced by Kurtin, in which the skin that has been frozen with ethyl chloride is planed down with a revolving metal brush. I have used the latter method in many cases with excellent results.*

Samuel Monash, M.D.
2 E. 54th St., New York 22.

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.